NETWORKWORLD CLEAR CHOICE

Symantec Enterprise Vault wins 10-vendor test

All of the products we tested demonstrated similar performance numbers when it came to archiving large numbers of e-mails. What made Symantec, Mimosa and C2C Systems stand out from the pack were superior discovery, policy enforcement and management features. **Page 30.**

NETWORKWORLD

Maximize your return on IT ■ www.networkworld.com December 8, 2008 ■ Volume 25, Number 47

MPLS service gets dumped

Shortcomings of an MPLS service led printing firm Wise Business Forms to dump the network service in favor of an Internet-based VPN that delivers better speed, costs less and will pay for itself in 16 months. **Page 20.**

Malware targets Firefox

Researchers at BitDefender have discovered a new type of malicious software that collects passwords for banking sites but targets only Firefox users. **Page 22.**

Microsoft, EMC partner on data-loss prevention

EMC's RSA technology to be built into Windows products. **Page 22.**

VMware tames the desktop

Offline access, reduced storage highlight overhaul of VMware View desktop virtualization offering. **Page 26.**

NEWSPAPER ■ $5.00

IP contact centers bring new challenges

BY TIM GREENE

IP contact centers are proliferating, but they still pose a set of potential gotchas that businesses need to beware of as they consider upgrading from the TDM world, experts say.

Hidden costs, personnel considerations and cripplingly complex integrations are among the possible pitfalls corporations face as they make the shift to more feature-rich and flexible IP centers.

With more than half of all contact centers still based on TDM, the bulk of contact center executives face tough decisions about how to migrate successfully from one technology to another, says Sheila McGee-Smith, president of McGee-Smith Analytics. Here are some of the challenges they face:

- Start with the basics. The underlying IP network might not be fit to support the contact center. "Voice quality is so much more important in contact centers," says Matthias Machowinski, an analyst with Infonetics. "It's the No.1 thing."

As a result, the adoption of IP

See Contact center, page 16

IT still needs to unite fixed and mobile nets

BY JOHN COX

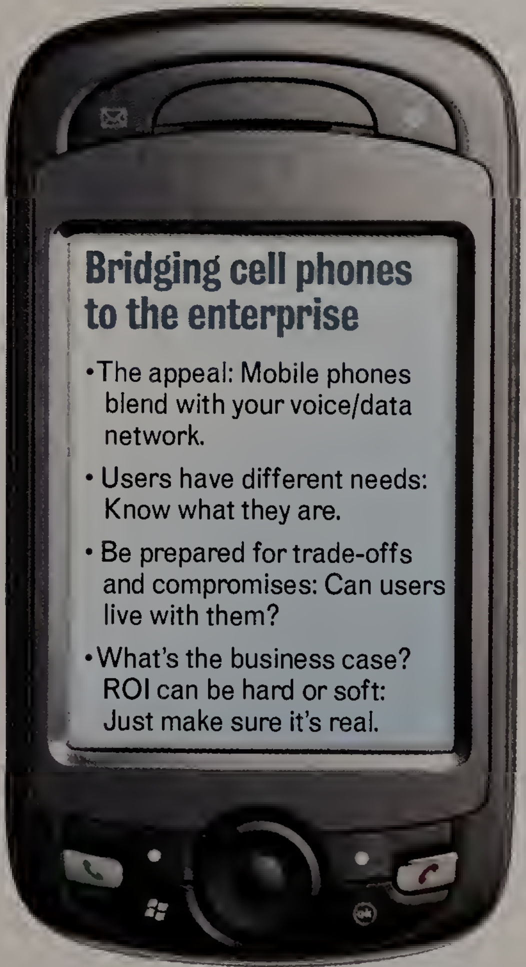
For a concept that's remarkably easy to reduce to a sound bite, bridging the gap between cellular phones and enterprise networks (fixed-mobile convergence) remains stubbornly hard to implement.

The basic idea is a mobile device that can use either a Wi-Fi or cellular connection, and automatically shift between them, to make or take calls, becoming an extension of the enterprise telephony and data networks. It's part of a trend toward the still ill-defined goal of unified communications.

Even with a flock of products designed for this purpose, from big, established players and hard-charging start-ups, and even when pilot deployments are successful, enterprise IT executives refrain from taking the FMC plunge. And some of them are looking at alternatives or interim steps to gain some of the benefits promised by FMC.

"Don't think of this as an all-or-nothing proposition," says Jack Gold, principal of J. Gold Associates, a technology analysis consultancy. "You don't have to do everything, or deploy everything to everyone in your organization. . . . Ask yourself, 'how does mobile voice communications help me?'"

See FMC, page 39



Bridging cell phones to the enterprise

- The appeal: Mobile phones blend with your voice/data network.
- Users have different needs: Know what they are.
- Be prepared for trade-offs and compromises: Can users live with them?
- What's the business case? ROI can be hard or soft: Just make sure it's real.

DATA CENTER MAKEOVER

Cloud computing, virtualization and modular construction technology, like Microsoft's "Generation 4" pictured here, are changing data centers into more flexible computing environments that can be manipulated as business needs change. Pages 12 and 14.

40 Million

Credit Card Numbers Stolen from TJX

98,930 Affected In Forever 21 Data Breach

Johnson, Globe Staff

Trojan horse captures data on 2,300 Oregon taxpayers ■5C

cold front has been active
appears to be getting warmer by tomorrow's end.

continued on page 12C

Hotel Chain Falls Victim to 14,000 Data-Stealing Malware incidents

University of Indianapolis Hacked: 11K Student, Faculty, Staff records stolen

4C

USINESS

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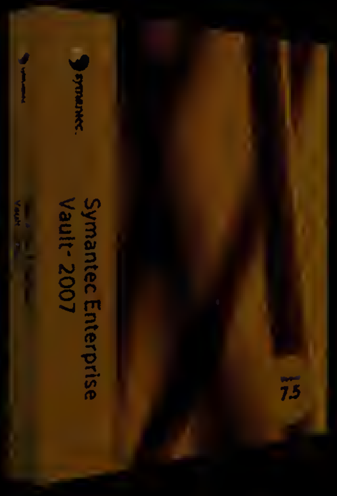
NETWORKWORLD CLEAR CHOICE

E-MAIL ARCHIVING TOOLS



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Online:
Slideshow: E-mail archiving tools focus on e-discovery and compliance.
www.nwdocfinder.com/7850

GOODBADUGLY

Now *that's* thinking ahead!

A group of open source software advocates set out a road map for the software industry through 2020 at the Open World Forum conference in Paris last week. They painted a rosy vision in which free, libre and open source software (FLOSS) will enter the mainstream of the software industry and contribute to reducing the digital divide between rich and poor. Among other things, social networks will rely on ubiquitous, open cloud-computing services, they said.

Blame Google — for everything

Seems there's hardly a big world event these days where Google doesn't get fingered for something or other. The latest: reports from investigators that the terrorists who attacked south Mumbai in India used digital maps from Google Earth to learn their way around.

Hang onto your job

In the largest monthly layoff toll since January 2002, U.S. companies cut 181,671 jobs in November, a 61% increase compared with October, according to Challenger, Gray & Christmas. The financial, retail, transportation and automotive sectors were hit hardest, but computers and electronics followed, with 7,994 and 7,356 jobs lost last month, respectively.

IT Roadmap:
Security and compliance

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A window into TCP

Re: Using a packet trace to show TCP throughput (www.nwdocfinder.com/7826):

You've very clearly set forth the W/d (window/delay) equation. Keep in mind that TCP looks at the MSS (that is, TCP payload). What's usually difficult to see in a trace is how many packets are sent before waiting for an ACK because TCP does a good job of interleaving. You end up having to look at which ACK goes with which payloads to see how much is unacknowledged.

There's another interesting one: Bandwidth-delay product (Bd), which works from the other side of the question. Instead of answering why things are slow, it seeks to answer what the window size would have to be to fill the pipe. So, if you have an OC-3, B = 155*1024*1024 = 162,529,280 bps. If your delay is 75 ms (0.075 sec), the formula is 162,529,280/8*0.075 = Window size of 1,523,712 bytes. Because you can't enter a window size of more than 65,535, you'll have to enable windows scaling (RFC1323) to get there.

Also note that when determining the transmission rate, TCP will consider the smallest of three windows: send, receive and congestion. You can usually change the receive window by changing the operating-system settings (often referred to as *the* TCP window). The congestion window is a calculated value and is affected by packet drops, so it cannot be changed. The send window is usually controlled by application settings. Of the three, only the receive window can be observed in packet decodes. The other two can only be inferred from the data. I saw an issue where the client had a huge TCP receive window, but the server had an 8k send window; when latency was high, throughput was very low.

DrTCP (www.nwdocfinder.com/ 7832) is an easy Windows GUI for enabling RFC1323. For Unix, you'll have to hit the man pages.

Sean Boulter

Discuss at www.nwdocfinder.com/7826

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Macs, Unix and Windows

Re: Judge orders Ballmer to testify in 'Vista capable' case (www.nwdocfinder.com/7827):

Mac OS runs on Unix. Linux is based on Unix. There are dozens of flavors of Unix. There is a reason that there are communities of thousands of people using and developing Unix-based systems. It's not utility that makes Unix so admirable; it's the security, customizability (new word), support and functionality that make all flavors of Unix the most-effective operating system platforms to date. You don't see Windows using secure random-number generation or stack-smashing protection. You could if it were open source, but it's not. And that is how it remains so vulnerable to attacks. Just last week, Microsoft fixed a security vulnerability that they had known about for years. The open source community would have made that fix very quickly.

> “Mac OS definitely does not lack in utility. Boot up a Mac for the first time, and you will discover that you don't need to download anything. You don't need to update your drivers. You don't need to wait for Microsoft to release security fixes.”

You'd be amazed to see everything that Windows, in fact, can't do. You may ask, "What about all the applications that only run on Windows?" Well, they don't only run on Windows. Linux can run Windows executables without even using an emulator. In Windows, you can't communicate with the hardware directly. In Linux, I can make the LEDs on my laptop turn on and off to the beat of the music I am playing. Useless, of course, but it's an example. Here's a better one: Windows can't inject packets into a wireless network. That makes exploiting Wired Equivalent Privacy and W-Fi Protected Access vulnerabilities take days instead of just minutes.

Oh, and Mac OS definitely does not lack in utility. Boot up a Mac for the first time, and you will discover that you don't need to download anything. You don't need to update your drivers. You don't need to wait for Microsoft to release security fixes. You don't need to even download Adobe Reader to read that PDF you're about to download. Everything works as it should right out of the box. *That's* utility. And it even runs Windows applications (without rebooting).

Micah Henning

Discuss at www.nwdocfinder.com/7828

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification

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BLOGOSPHERE

Eight Microsoft bugs to be fixed next Tuesday. The Microsoft Subnet blog reports, "Will they or won't they patch a controversial bug on Tuesday that made news last month as a big-time hacker favorite? Some security experts are saying yes — that amongst the eight security updates Microsoft will deliver next week (six of them marked 'critical,') will be a patch for a Windows Server 2008 vulnerability reported in April. To be fair, that bug in Windows Server 2008 has had a sketchy history. It was found by Argentinean security researcher Cesar Cerrudo, reports *Computerworld*. The researcher at first called the bug a design flaw. But after he presented his findings at a security conference Microsoft issued Advisory 951306. In October, Cerrudo posted a proof-of-concept exploit for the months-old vulnerability. The bug allows an attacker to control Windows by running code under any service in Windows Server 2003. Researchers say the Patch Tuesday bulletin Microsoft marked 'Windows 1' looks like a fix. **www.nwdocfinder.com/7835**

Obama 2.0: the perpetual online campaign. *Network World* Senior Editor John Cox writes in his blog, "The Web's social-network applications will be the key to governing for president-elect Barack Obama. At least that's the contention of Todd Gitlin, professor of journalism and sociology and chair of the Ph. D. program in Communications at Columbia University, and previously, a president of the Students for a Democratic Society (SDS). Gitlin's argument, such as it is, appears on a cringe-inducing commentary in 'The Atlantic.' It's cringe-inducing because it is so abjectly fawning that one suspects Gitlin is angling for a post in the Obama administration."
www.nwdocfinder.com/7836

CCVP: You must choose, but choose wisely - Part 1. Kevin Wallace writes in his Cisco Voice over IP blog, "Once you decide to start down the CCVP certification path, you must choose which CCVP path. If you check out Cisco's CCVP certification page, you'll notice there are two paths for attaining your CCVP. The decision depends largely on what version of Cisco Unified Communications Manager (UCM) you're using. If you're using the Windows-based version (i.e. UCM 4.x), you might choose one path, while if you're using the Linux-based version (i.e. UCM 6.x), you might choose the other path."
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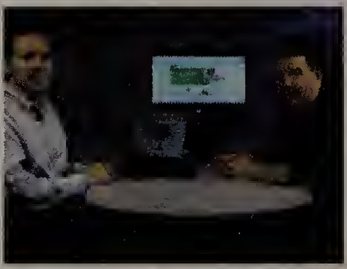


Protecting credit-card swipes

Keith Shaw talks with ProPay's Greg Pesci about the company's new system that lets home-based merchants more easily (and securely) accept credit cards from customers.

www.nwdocfinder.com/7839

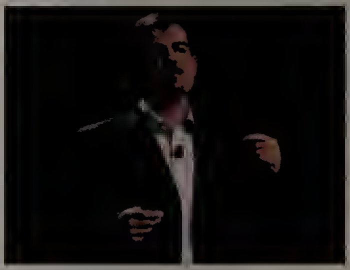
IDG NEWS WIRE:

Gates lobbies for education funding

Bill Gates called on U.S. lawmakers last week to continue investing in U.S. education in the face of the declining economy.

www.nwdocfinder.com/7840

IT ROADMAP:



The Force behind the Force

Peter Hricak, senior manager for network and telecoms at LucasFilm, discusses what it takes to keep the movie giant up and running.

www.nwdocfinder.com/7841

BEST OF NWW'S NEWSLETTERS

Recession-proof jobs

Training: The 25 most recession-proof jobs include several technology-focused career paths, such as software design and development, networking and systems administration, and IT security specialists, according to an analysis by Jobfox, a career Web site. Jobfox looked at the 120-day period ending Oct. 28 and ranked professions based on demand from recruiters and other employer agents using the online service. Sales reps and business development professionals came in first, while tech jobs showed up four times in the top 25. With median salaries of $75,000 to $85,000, software design and development was the fifth-most recession-proof job. Networking and system administration was in seventh place and commanded $55,000 to $65,000 in median salary. Technology executives, making $105,000 to $115,000, were the 16th most in-demand, up from a prior ranking of 24, according to Jobfox. IT security moved into the top 25 list at No. 20, with the field commanding a median salary of $75,000 to $85,000. Database administration, meanwhile, dropped out of the top 25 list. The rankings provided Jobfox's first look at the job market after the government bailout of the finance industry. The IT sector seems to be faring well compared with the overall economy. **www.nwdocfinder.com/7823**

Network management: The old saying "ignorance is bliss" doesn't apply to the myriad factors that can contribute to poor application and network performance. The less network managers know about the components in their environment that impact performance, the more likely they suffer unplanned outages, application performance degradation and costly network downtime. The problem is rooted in a lack of visibility into network and application performance, according to industry watchers. Aberdeen Research polled more than 200 organizations between May and June 2008 and found that nearly 60% of the organizations polled reported that they were not satisfied with the performance of business critical applications. The research firm in September surveyed 167 organizations to learn how they work to overcome the challenges associated with network and application performance. The good news is that 85% of those polled said they increased the amount of performance data collected in the past two years. More than half also reported decreasing the time required to troubleshoot network and application performance issues, and 41% said they improved their organization's success rate in preventing performance problems. **www.nwdocfinder.com/7824**

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Nokia debuts smartphone

Nokia unveiled its high-end N97 3G smartphone, combining a touchscreen with a tilted 3.5-inch display, a full QWERTY keyboard, and inviting a straight-up comparison with Apple's trend-setting iPhone. The handheld combines advanced hardware features with a bundle of services, including assisted GPS, which are intended to merge the device tightly with location-based applications, social networks and the mobile Web. Promoted as a "mobile computer," the N97 supports up to 48GB of storage, including 32GB of onboard memory, expandable with a 16GB microSD card for music and other media. It runs the latest version of Nokia's S60 Symbian operating system. Some of the drawbacks: early consensus is that the N97's touch interface is not quite up to fluidity of the iPhone standard; it's pricey (nearly $700 without a carrier subsidy); and it won't be available in the United States until sometime after mid-2009. **www.nwdocfinder.com/7842**

AT&T to cut 12,000 employees. AT&T will lay off 12,000 workers through 2009 as the company reorganizes and faces a tough economic environment, the company said last week. AT&T will spend $600 million in its fourth quarter 2008 for severance payments to those workers, which represent about 4% of the company's workforce. The company tried to soften the blow by saying it will add employees in some areas, such as wireless, video and broadband, in order to meet customer demand. Many non-management employees who are affected will have a guaranteed job offer as stipulated in union contracts, AT&T said. The company added it will reduce its 2009 capital expenditure from 2008 levels. Those plans are now being finalized and will be revealed during AT&T's fourth quarter 2008 earnings call at the end of January. **www.nwdocfinder.com/7843**

Microsoft taps ex-Yahoo VP to run online services group. Microsoft has appointed Qi Lu as the president of its Online Services Group. Lu previously was executive vice president of engineering for Yahoo's search and advertising technology group, where he was responsible for developing Yahoo's Web search and monetization platforms. Lu, who holds nearly 20 patents, is expected to help rev up Microsoft's battle with Google on the search and advertising fronts. Microsoft's Online Services Group, which includes its online advertising platform, Hotmail and instant messaging service, Live Search and the MSN portals, posted $770 million in profit during Microsoft's fiscal first quarter of 2009, a nearly 15% increase over the same quarter in 2007. Lu spent 10 years at Yahoo before leaving in August. He will officially join Microsoft on Jan. 5 and report directly to CEO Steve Ballmer. **www.nwdocfinder.com/7844**

Apple quietly recommends using antivirus software. Apple, which has long perpetuated the belief that its operating system is immune to security problems, is recommending that users install security software to make it harder for hackers to target its platform. "Apple encourages the widespread use of multiple antivirus utilities so that virus programmers have more than one application to circumvent, thus making the whole virus writing process more difficult," according to a support note. Apple's position — while prudent — undercuts its popular advertising campaign which depicts PCs running Windows as an overweight nerdy man with the flu. But data by computer security researchers has shown that while Apple hasn't been affected by malicious software nearly to the extent as Windows, it's because hackers go after the most widely used platform. Apple is gaining market share, however, which means hackers could increasingly look to exploit the platform, particularly if it becomes perceived as an easier target.
www.nwdocfinder.com/7845

FBI says copper thefts threaten U.S. infrastructure. The theft of copper wire has become so pervasive that it poses a threat to the national infrastructure, the U.S. Federal Bureau of Investigation warned last week. There's a lot of copper lying around the United States, in cellular towers, telephone lines, electrical substations and even vacant homes, and stealing it has become a lucrative activity for organized gangs and drug addicts over the past few years, according to the FBI. In the past year, copper thefts have wrought havoc with Federal Aviation Administration towers in Ohio and with a tornado warning system in Jackson, Miss. Such thefts are typically prosecuted by local authorities but the FBI is now taking it more seriously, the agency said in a statement. "On the surface, it could be a relatively small theft," the FBI said. "But the public safety impact could be significant."
www.nwdocfinder.com/7846

Internet satellite scheduled for launch in 2011. A California satellite technology provider has signed a deal to put a planned broadband Internet satellite into orbit above the United States in the first half of 2011. The ViaSat-1 satellite will have an overall throughput of 100Gbps, which should enable it to support 2Mbps service to about 2 million subscribers. It is expected to be the highest capacity satellite in the world at time of launch, and that should mean the price of transmitting each bit of data is about a tenth that of current services. In turn this should enable broadband Internet services at much lower prices than now, according to ViaSat.
www.nwdocfinder.com/7847

Cisco renews call for national broadband strategy. Cisco last week renewed its call for a national broadband strategy to be a priority for the new Congress and the incoming Obama administration. Cisco says such a strategy is a "critical tool" for economic growth and cites research conducted by Oxford University as its latest motivation. "Without high-quality, reliable and accessible broadband that reaches every part of our nation, we will miss out on the robust opportunities of economic growth, job creation, collaboration and social benefits delivered by Web 3.0," said Jeff Campbell, senior director of technology and trade policy for Cisco, in a statement. Cisco has pushed for making broadband a national policy priority for nearly a decade.
www.nwdocfinder.com/7848

Mobile-phone market continues to weaken. Research In Motion last week lowered its revenue and profit forecasts, echoing a mid-November downgrade by Nokia. RIM says it expects third quarter revenue of $2.75 billion to $2.78 billion, instead of the $2.95 billion to $3.1 billion previously forecast. That still represents a gain of about 65% compared with the same quarter a year ago. Nevertheless, fiscal 2009 is shaping up to be a big letdown compared to RIM's stellar fiscal 2008 numbers. Three week ago, Nokia projected lower-than-expected fourth quarter unit shipments, estimating total shipments for the fiscal year at 1.24 billion instead of 1.26 billion units. Gartner says year-over-year growth in the global smartphone market is the weakest since the research firm began tracking the industry. Smartphones overall will grow, but more slowly than in the past.
www.nwdocfinder.com/7849

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The data center of the future

BY JON BRODKIN

The enterprise data center of the future will be a highly flexible and adaptable organism, responding quickly to changing needs because of such technologies as virtualization, a modular building approach and an operating system that treats distributed resources as a single computing pool.

The move to flexibility in data-center processes, which was discussed extensively by analysts and IT professionals at Gartner's 27th annual data center conference last week, comes after years of building monolithic data centers that react poorly to change.

"For years we spent a lot of money building out these data centers, and the second something changed it was: 'How are we going to be able to do that?'" says Brad Blake, director of IT at Boston Medical Center. "What we've built up is so specifically built for a particular function [that] if something changes, we have no flexibility."

Rapidly changing business needs and new technologies that require extensive power and cooling are necessitating a makeover of data centers, which represent a significant chunk of an organization's capital costs, Blake notes.

For example, "when blade servers came out, that completely screwed up all of our matrices as far as the power we needed per square foot, and the cooling we needed because these things sucked up so much energy, used so much heat," Blake says.

Virtualization of servers, storage, desktops and the network is the key to flexibility in Blake's mind, because hardware has long been tied too rigidly to specific applications and systems.

The growing use of virtualization is far from the only trend making data centers more flexible, however. Gartner expects to see today's blade servers replaced in the next few years with a more flexible type of server that treats memory, processors and I/O cards as shared resources that can be arranged and rearranged as often as necessary.

Instead of relying on vendors to decide the proportions of memory, processing and I/O connections on each blade, enterprises will be able to buy whatever resources they need in any amount, a far more efficient approach.

For example, an IT shop could combine 32 processors and any number of memory modules to create one large server that appears to an operating system as a single, fixed computing unit. This approach also will increase utilization rates by reducing the resources wasted, because blade servers aren't configured optimally for the applications they serve.

Data centers also will become more flexible because they will be built following a modular approach that divides them into self-contained pods or zones that have their own power feeds and cooling.

Data center stats

Gartner's 27th annual data-center conference produced no shortage of research related to energy consumption, virtualization, storage growth and other topics:

- **45% of IT professionals** polled at the conference are expanding or planning to expand data centers in the next two years, while 43% are consolidating.
- A standard 9,000-square-foot, Tier 3 data center that supports 150 watts per square foot will cost approximately **$21.3 million** to build and use **$1 million** in electricity annually.
- Storage spending will increase **more than 7% a year** from 2007 to 2011, compared with IT budgets' annual growth of 2.5%.
- **12%** of x86 server workloads are running in virtual machines today; by 2013 that number will be **61%**.
- Desktop virtualization will take off, with the number of virtualized PCs growing from **less than 5 million** in 2007 to **660 million** by 2011.

These zoned data centers will resemble shipping-container-based data centers, but they won't have to be enclosed. When a data center isn't treated as a homogeneous whole, it is easier to separate equipment into high, medium and low heat densities, and devote expensive cooling only to the areas that really need it. Additionally, this separation allows zones to be upgraded or repaired without causing other systems to go offline.

"Modularization is a good thing. It gives you the ability to refresh continuously and have higher uptime," Gartner analyst Carl Claunch said.

This approach can involve incremental build-outs, building a few zones and leaving room for more when needed. But power is not being wasted, because each zone has its own power feed and cooling supply, and empty space is just that. This is in contrast to long-used design principles that required power to be supplied to every square foot of a data center even if the space wasn't needed yet.

"Historical design principles for data centers were simple — figure out what you have now, estimate growth for 15 to 20 years, then build to suit," Gartner states. "Newly built data centers often opened with huge areas of pristine white floor space, fully powered and backed up by a UPS, water and air cooled, and mostly empty. With the cost of mechanical and electrical equipment, as well as the price of power, this model no longer works."

The zone approach assumes that each section is self-contained, but that doesn't mean the data center of the future will be fragmented. Gartner predicts that corporate data centers will be operated as private "clouds," flexible computing networks modeled after such public providers as Google and Amazon.com yet built and managed internally for an enterprise's own users. By 2012, Gartner predicts, private clouds will account for at least 14% of the infrastructure at Fortune 1000 companies, which will benefit from service-oriented, scalable and elastic IT resources.

Private clouds will need a "meta operating system" to manage all of an enterprise's distributed resources as a single computing pool, Gartner analyst Thomas Bittman said, arguing that the server operating system relied on so

See Data center, page 14

InBrief

Clearwire, Sprint close deal

Sprint Nextel and wireless network operator Clearwire last week completed a deal to create a new company and build a nationwide WiMAX network. The agreement, first announced in May, brings together Sprint's and Clearwire's radio spectrum holdings and fledgling WiMAX operations under a new company that will retain the Clearwire name. The new venture aims to offer an alternative to traditional mobile services from carriers, as well as wired broadband. It promises to make its client devices available through retailers, with no carrier subsidy and no term contracts for subscribers, as well as unfettered standard Internet access. Clearwire plans to offer a mobile WiMAX service, called Clear, with average downstream speeds of 2M to 4Mbps.

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Microsoft blows roof off data center

BY JOHN FONTANA

Microsoft has seen the future of the data center and oddly enough, it's missing a roof.

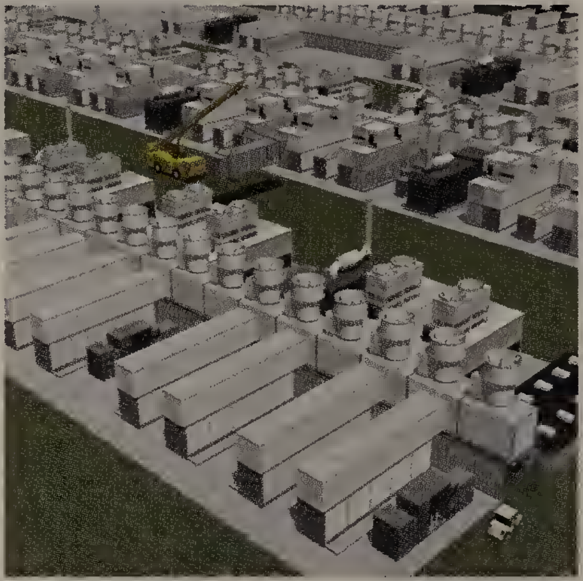
The company's future-data-center design, which will be its de facto standard in five years, is a cross between an electrical switching station, an RV park and the closing "warehouse" scene from the 1981 film "Raiders of the Lost Ark."

The company envisions a set of prefabricated containers the size of semi-trailers filled with as many as 2,000 preconfigured servers. The containers can be parked next to and plugged into pre-built mechanical, electrical, cooling and security components. In essence, the data center is a giant collection of boxes and pluggable components that can grow and shrink based on need.

The container portion of the idea is nothing revolutionary. Microsoft is installing them in its Chicago data center. Sun introduced a server container called Project Blackbox in 2006 and Google received a patent in 2007 on its "mobile data center" stored in a standard shipping container, which unlike Sun's Blackbox, could be clustered in the same modular fashion that Microsoft is proposing.

The container idea also has its critics, who say containers are rife with electrical and mechanical concerns, have power management and cooling issues, present a single point of failure, and are susceptible to damage during shipping. Microsoft, however, is not talking just about containers, but the configuration of the entire data center.

The company last week unveiled what it is calling its "Generation 4 Modular Data Center" plan, a blueprint that will define its cloud data-center infrastructure in the next five years.



The company's future data center design is a cross between an electrical switching station, an RV-park and an amazing warehouse.

These data centers have four walls and a sophisticated perimeter security system, but are open to the elements because they lack a roof. Trucks wheel the boxes into the enclosure where they are connected to power and cooling stations before being brought online.

It's a bold plan to drive industry thinking about how to construct and operate data centers in a world of capacity spikes, real-time needs for computing power and expanding green initiatives.

"We believe it is one of the most revolutionary changes to happen to data centers in the last 30 years," wrote Michael Manos, general manager of global foundation services for Microsoft, in his blog introducing Microsoft's Generation 4 plan.

BusinessWeek reported last month that Microsoft said it was going to "reinvent the infrastructure of our industry" by building some 20 data centers that carry a price tag of as much as $1 billion apiece.

"In short, we are striving to bring Henry Ford's Model T factory to the data center," Manos wrote. "In our design process, we questioned everything. You may notice there is no roof, and some might be uncomfortable with this. We explored the need for one and throughout our research, we got some surprising (positive) results that showed one wasn't needed."

Microsoft says all the pieces needed to construct a data center would be built off-site and assembled once they arrived at the data-center location, much the way planes, cars and computers are built today. The company says the process would mean that less time and money would be needed to erect a new data center.

Microsoft expects efficiencies in power use that blow away even the best-rated facilities today based on power usage effectiveness (PUE), a metric developed by The Green Grid and used to determine the energy efficiency of a data center.

"A key driver is our goal to achieve an average PUE at or below 1.125 by 2012 across our data centers," Manos wrote on his blog. He added: "More than that, we are on a mission to reduce the overall amount of copper and water used in these facilities."

Achieving such a low PUE average would be a breakthrough given that the typical data center has an average PUE of 2.5, according to the Uptime Institute. A best-case scenario today could produce a 1.6 PUE average if the data center is using the most efficient equipment and best practices, the institute says.

Operationally, the data center would define different classes of service to meet the needs of the applications and services deployed and to create cost efficiencies. The classes include such à la carte options as UPS and backup generators, temperature controls and redundancy.

The varying configurations will drive engineering innovations that will lower operational costs for applications, Microsoft says.

To show that Microsoft is aiming at industry interoperability, the data center's containers will have common interfaces so computer, UPS, generator and other vendors can plug their wares into them.

A 2005 memo written to Microsoft employees by now chief software architect Ray Ozzie was the trigger for thinking about how Microsoft would evolve deeper into an operations company rather than a provider of packaged software, Manos admits.

Microsoft has posted a short video to show how its Generation 4 data centers would be constructed and how they would operate (www.nwdocfinder.com/7834). ■

Data center

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heavily today is in transition. Virtualization became popular because of the failures of x86 server operating systems, which essentially limit each server to one application and waste tons of horsepower, he said. Now, spinning up new virtual machines is easy, and they proliferate quickly. "The concept of the operating system used to be about managing a box," he said. "Do I really need a million copies of a general-purpose operating system?"

IT needs server operating systems with smaller footprints, customized to specific types of applications, Bittman argued. With some features stripped out of the general-purpose operating system, a meta operating system to manage the whole data center will be necessary.

The meta operating system is evolving but is similar to VMware's new Virtual Datacenter Operating System. Gartner describes the concept as "a virtualization layer between applications and distributed computing resources … that utilizes distributed computing resources to perform scheduling, loading, initiating, supervising applications and error handling."

All these new concepts and technologies — cloud computing, virtualization, the meta operating system, zones and pods, and more customizable server architectures — are helping build toward a future where IT can quickly provide the right level of services to users based on individual needs, and not worry about running out of space or power. The goal is to create data center resources that can be easily manipulated and are ready for growth, Boston Medical Center's Blake says.

"It's all geared toward providing that flexibility because stuff changes," Blake says. "This is IT. Every 12 to 16 months there's something new out there, and we have to react." ■

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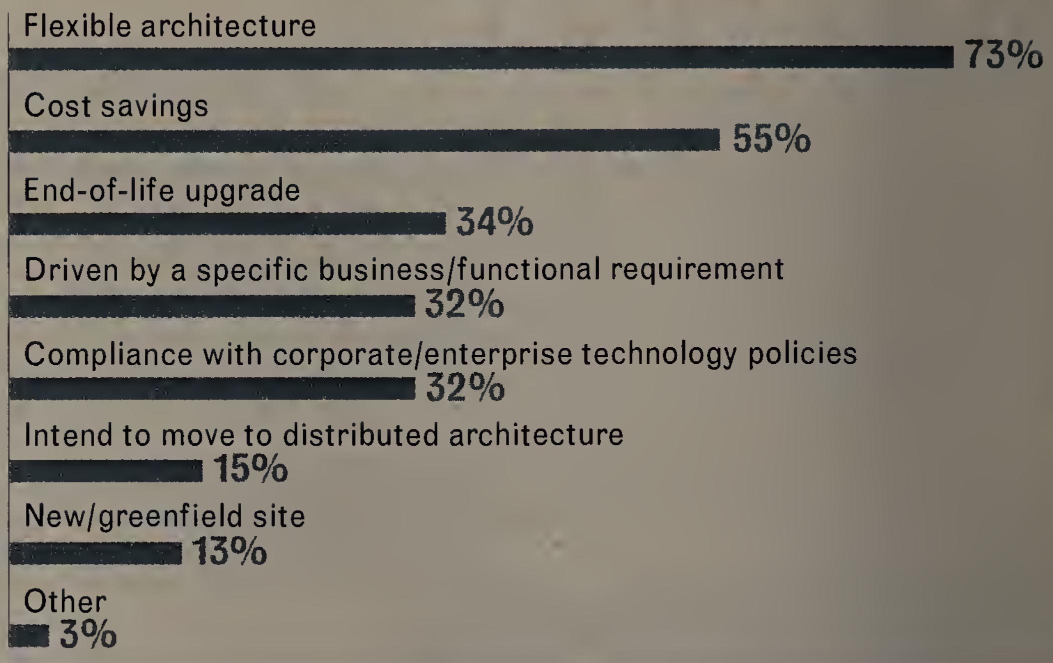
Contact center

continued from page 1

Dimension Data asked 151 contact center execs:

What are the main reasons for bringing IP into your call center?



contact centers in general lags the adoption of IP voice. "Businesses are reluctant because of reliability concerns and voice quality," Machowinski says.

So, before deployment, a full network assessment is called for to gauge QoS and make sure the network has the level required to support professional-grade quality in handling customer-facing calls.

It is essential to consider call quality for types of agent based on location, because they will access the contact center over infrastructure that varies. For instance, the call quality for an agent working from home depends not only on the corporate infrastructure, but also on the quality of the broadband service to the agent's home and even the agent's home network, Machowinski says.

Businesses should tap the in-house VoIP expertise that they may have developed for their non-contact-center calling. This should be readily available because typically companies are willing to use VoIP on calls within the company but not to outside parties, McGee-Smith says. "They're willing to have IP on intra-company calls, but to take orders or support customer service, they are more reluctant to use IP contact centers because of quality issues. Usually you're the last man standing," she says.

- Sticking with your current call-center vendor could reap big cost benefits, but may not. "Do I attempt to keep what applications I have as I migrate to IP, or do I scuttle the whole thing and start again?" McGee-Smith asks. "If you use the vendor you have, there are may be issues with upgrading."

For instance, a 7-year-old TDM contact center may be so different from a vendor's current IP offering that the disruption of the upgrade won't be any worse than installing a new vendor's gear, she says. "Is it more disruptive to switch vendors than it is to stay with the same one? My premise is it's not, really," McGee-Smith says. "It might be no more disruptive to start from scratch."

The flip side is that upgrading — even though it may amount to a rip-and-replace — may be had at a bargain price because the vendor wants to retain customers and will pay a premium. Vendors will readily offer 30% off the per-seat price, but that's not enough to clinch a deal. "If they offer 50% or even better, then you're making me pay attention. If not, then it makes more sense to put my paper on the street with an RFP," McGee-Smith says.

Advertising for bidders will typically shake out better deals if vendors start with shallow discounts, McGee-Smith says.

Mitigating factors include the extent to which customers have integrated the contact-center platform with enterprise applications. "If you spent time and money integrating then it's worth considering" upgrades to existing platforms to avoid further integration costs, McGee-Smith says.

Then again, rebuilding the integration to use newer technologies, such as XML, that result in a more flexible architecture may be worth the investment in the long run. "You have to look at that situation more carefully," McGee-Smith says.

Customers also need to consider what has happened to their vendor between the time they bought their current system and now. They may have switched focus, sold off assets and lost some edge over the competition. There may even be new vendors that weren't around when the current contact center was bought, she says. "One of the issues to get over is loyalty to your existing vendor," McGee-Smith says. "Just because you have something in place doesn't mean it's the best choice going forward."

- Avoid the temptation to swap features of the old platform for their rough IP equivalents. Demand more, says Grant Sainsbury, practice director of Customer Interactive Solutions at Dimension Data. Instead, plan how new contact center features enabled by IP can be turned into money as soon as possible, even though it may seem safer just to replicate the TDM functions. "That's a bad strategy. You're making an investment," he says.

An IP upgrade is the opportunity to improve integration of front-office and back-office applications and to redistribute the workforce in a more cost-effective way, Sainsbury says. For example, be prepared for converting call routing strategy in ways that can improve customer service. Routing in a TDM contact-center might call for ringing one set of agents initially, then shifting to a different class of agent if the call isn't picked up in five rings, then to a third class if it isn't picked up in another five rings. With IP, presence could identify the most appropriate available agent right away and connect seconds before the old system would have found her, he says.

Integrating the contact center's call-distribution functions with other business applications is the biggest goal, Machowinski says. Without links to databases and customer records, productivity gains that a contact center might otherwise provide would be impossible. Adapting those interfaces created for TDM contact centers to IP contact centers may require a lot of work, he says. "You'd be surprised how many companies have proprietary databases," that may not have such standard interfaces as XML and Session Initiation Protocol, he says.

The integration should take place, but it will require close examination to determine whether to adapt what's there or start fresh, Machowinski says.

Businesses should look at incorporating computer-telephony integration with their call centers. Although the technology has been available for 10 years, it still is used in only 30% to 40% of contact centers, McGee-Smith says. Such work is more complicated than it might seem at first blush because it can alter business processes.

IP contact centers can offer integration with instant messaging, for instance, which can allow an agent to seek an expert while they are talking to a caller. Rather than being put on hold while the agent seeks help, the customer remains on the line while the expert is conferenced in. This can result in faster resolution of a call and a more satisfied customer, she says. "The nature of calls don't change, but hopefully my path to resolution becomes cleaner," McGee-Smith says.

- Don't be locked in by geography. Just because the current call center is located in a single building with hundreds of desks doesn't mean it has to stay there after it is converted to IP, McGee-Smith says. In fact, deploying agents

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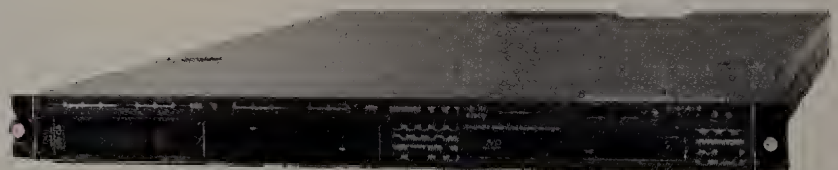
Cisco to video-optimize networks

BY JIM DUFFY

Cisco this week is expected to unveil the first in a series of enterprise products designed to process network video traffic intelligently.



The MXE3000 is an intelligent media-processing platform that transcodes a single source of content so that it is playable on any device, such as a digital sign, PC or mobile device.

The Media Experience Engine 3000 (MXE 3000) is a processing platform that sits between an enterprise switch and router, and is designed to simplify media sharing across the network by optimizing its delivery in any format for any device. It provides media conversion, real-time post-production, editing, formatting, and network distribution for businesses developing targeted visual communications, Cisco says.

Video is fast becoming the killer application for networks, according to Cisco and others in the industry. IP traffic will increase sixfold globally between 2007 and 2012 — a 46% compound annual growth rate — largely because of the business and consumer adoption of video, Cisco says, citing its own internal research.

Half a zettabyte will cross the global network by 2012, Cisco says.

"Video is at a tipping point," says Henry Dewing, analyst at Forrester Research. "It is a potential tsunami of traffic that could drown a lot of LAN and WAN infrastructures."

To help smooth the delivery of video in the middle of all that traffic, Cisco is rolling out the MXE 3000. The product transcodes a single source of content so that it is playable on any device, such as an IPTV, digital sign, PC or mobile device, Cisco says.

It also delivers real-time post-production and processing capabilities, such as watermarking, voice and video editing, text and image overlays, and noise reduction to create broadcast-quality video experiences, the company says.

"The MXE allows you to dynamically adjust resolution and codec, a key tool to enable the optimal utilization of the bandwidth available for this new traffic type," Dewing says,

The MXE 3000, with "near wire-speed" performance, should not introduce any bottlenecks into the video-optimized network just by being another processing element in that network, Dewing adds.

"IT operations managers are saying, 'I've got this video stuff crossing my network, clogging things up. How do I stop it?'" Dewing says. "They don't need to find a way to turn it off; they need to find a way to support it effectively. MXE is a tool to help them manage that."

The MXE 3000 is the first in a new line of products and technologies designed to enable users to build what Cisco calls "medianets" — networks optimized for video with intelligent processing. Cisco's business-video strategy is to help enterprises implement video solutions that create visual network experiences across multiple devices through faster content delivery and simplified media sharing.

Last month, Cisco unveiled a medianet-enabled product for service providers: the Advanced Video Services Module (AVSM) for the new ASR 9000 edge router.

Cisco's Remote Operations Services (ROS) provides remote management for the MXE — 24/7 monitoring, incident management, identification and remediation, and service-level management, Cisco says.

MXE 3000 will compete with the adaptive codec capabilities of video bridge products from Tandberg, Polycom and Radvision, Dewing says. MXE may be more advanced, however, because it can transform codecs and resolutions, including those for archived content, he says.

Instead of videoconferencing vendors having to respond, the onus is on Cisco's traditional network infrastructure competitors to video-optimize their products, Dewing says. "What Cisco's basically done is said, 'video's going to be the overwhelming majority of network traffic — it's not what the Internet was originally designed for, it's going to be an issue if not dealt with appropriately,'" he says. "But Cisco stands to lose more than most if video can't be carried on the network."

MXE 3000, AVSM and medianets are part of Cisco's new Media Processing emerging-technology group. These new-product development initiatives and business-model concepts could become multibillion-dollar markets for Cisco. Existing emerging-technology groups include Cisco TelePresence, Digital Media Systems and Physical Security. Cisco also this week is expected to unveil a new release of its TelePresence system that works across satellite networks and offers an "expert-on-demand" service and support option. The Cisco MXE 3000 costs $65,000. ■

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Start-up targets app performance mgmt.

BY DENISE DUBIE

Seattle-based start-up ExtraHop Networks this week will unveil its flagship appliance that 10 beta customers installed earlier this year to identify application performance problems more quickly across sophisticated, distributed networks.

The problem isn't new. Poor application performance challenges network teams to find the root cause of a slowdown before they can fix the problem. In some cases, the network is to blame; in others the application could be flawed, but determining what needs to be fixed typically requires network managers to use several tools and consume too much staff time. That's why Jesse Rothstein, ExtraHop CEO, co-founded the company with fellow F5 Networks alumnus and ExtraHop President Raja Mukerji: to develop technology that quickly identifies the source of problems, ultimately reducing troubleshooting time and freeing up network staff for more important projects.

"The tools available today either provide a fire hose of data or only a small portion of targeted information," Rothstein says. "We wanted to help network and applications teams find the right haystack and then narrow down the search to find the needle causing the problem using one tool."

The ExtraHop Application Delivery Assurance system is software packaged as an appliance that connects to a span or network tap. It passively autodiscovers the servers and devices connected to the network and inspects network traffic. The product reassembles the path, or hops, an application takes across the distributed network. Such information helps when IT staff are trying to determine where application performance started to degrade or failed outright. The product serves up performance, protocol and other data via a Web-based user interface. That allows network and applications teams to drill down by application, device, protocol or even errors to learn more about the problem.

"We perform full-stream reassembly down to transaction-level details that can tell network managers, for instance, that a database an application is using has too many connections and is causing performance to slow down," Mukerji explains. The product also identifies misconfigured switches, common application-tuning problems and problematic stored procedures on databases. "The appliance really focuses in on Layer 4 through 7 with some Layer 2 and 3 information, and it offers recommended fixes and application-tuning options," he says.

ExtraHop, founded in January 2007, officially launched the product and company at a time of great economic uncertainty, when many IT executives are looking to cut costs.

"The biggest challenge the company faces will be trying to prove the value of what they offer in a down market," says Jim Frey, a senior analyst with Enterprise Management Associates.

The company also faces much competition from existing network performance management vendors such as Fluke Networks, Opnet Technologies, NetQoS, NetScout Systems and Network Instruments, as well as application-specific products available from Compuware, CA's Wily Technology and IBM Tivoli software. Industry watchers nevertheless say there could be a case made for investing in a product that reduces the number of tools and the amount of time it takes to solve application performance problems — especially when financial and labor resources are tight in many IT shops.

"IT departments have budget money, but they are being extremely careful about how they spend it. One of the advantages that ExtraHop offers is multiple features, generally available in different tools, in one tightly integrated product that is easy to install and maintain," Frey says. "They are taking on a problem that exists in every company and taking a unique approach by combining packet-level monitoring, application-aware analysis and time-sensitive analytics to understand what is happening with complex applications in distributed networks."

Available now, the ExtraHop Application Delivery Assurance Appliance starts at $50,000 to monitor 300 devices. ■

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ExtraHop

Company:	ExtraHop Networks
Founded:	January 2007
Headquarters:	Seattle
Management team:	Co-founders Jesse Rothstein, CEO, and Raja Mukerji, president
Product/ technology:	ExtraHop Application Delivery Assurance system is software packaged as an appliance that passively monitors network traffic to reassemble a complete picture of applications across the network.
Employees:	10
Funding:	$1.5 million led by Madrona Venture Group in December 2007.
Fun fact:	Founders had code-named the company "extra hop" to show how their technology shows all the hops an application takes, and helps recreate its path.

Printing firm dumps MPLS service

Wise Business Forms using dual DSL and cable access to reduces cost

BY TIM GREENE

An MPLS service's shortcomings led printing firm Wise Business Forms to dump the network service in favor of an Internet-based VPN that delivers better speed at less cost and will pay for itself in 16 months.

The firm's 250 users had recurring troubles with the reliability of the four AT&T T-1s feeding MPLS to Wise's Alpharetta, Ga., headquarters, says Marc Picardo, the private company's director of IT, but the determining factor was cost, not performance.

When the company installed a new digital-printing application that would boost the bandwidth requirements among its eight locations (spread out over six states east of the Mississippi), Picardo started looking for less-expensive options than the $1,400 to $1,800 per month, per site that doubling up the 1.5Mbps MPLS T-1s would cost. The monthly cost per site of the VPN connections, which double the bandwidth of the T-1s, is about $250, he says — less than he was paying for the MPLS service.

Wise's system integrator, Perket Technologies, recommended using the Internet as the WAN and connecting to it via lower-cost DSL and cable connections. With a DSL link to one ISP and a cable link to another ISP at each site, Wise would have redundant services to maintain reliability, Picardo says.

Perket, which had assisted Wise in converting from frame relay to MPLS two years ago, recommended dual Stonesoft StoneGate firewall-VPN appliances to link each site to the Internet. The firewalls can use both Internet connections simultaneously to load-balance traffic at each site; if one link goes down, the devices fail over to the other line, Picardo says.

One of the more time-consuming jobs of the transition was lining up the DSL and cable services. Because of the wide dispersion of the sites and the mix of access technologies, Picardo had to contract for WAN services with nine providers.

Now that all the lines are in, that number of providers doesn't create extra work. If a line fails, Picardo makes a call to its provider; he'd have to make such a call even if there were just one provider. So far, the only outages the VPN has experienced were due to problems inside the providers' networks, not on the last-mile access lines to Wise sites, he says.

The cable and DSL links provide ample bandwidth, and when one line fails, the StoneGate appliances divert all traffic to the second connection.

At the same time, Wise moved its data center from headquarters to a collocation site to avoid a problem the company had been having: losing power for so long at the data center that its UPS would run out of juice. Unlike the corporate sites, the data center is connected to the Internet via a 7Mbps connection that can burst to 10Mbps to handle peak traffic, Picardo says.

One downside of cobbling together DSL connections is that the available speeds vary because of the quality of copper lines and the distance between the corporate sites and the providers' central offices. The worst case for Wise is at its headquarters, where the maximum upstream DSL speed is 512K bps, which is inadequate in times of high use, Picardo says. As a stopgap, he installed two DSL lines to give an aggregate of 1Mbps. Cable service in the area was prohibitively costly because the provider would have to extend its network at Wise's expense.

Longer term, Picardo is looking into replacing the dual DSL connections with a T-1 Internet connection, which would have stricter QoS guarantees. Because most of the traffic from headquarters goes to the collocation site, he also is considering adding WAN-acceleration gear at those locations to boost throughput.

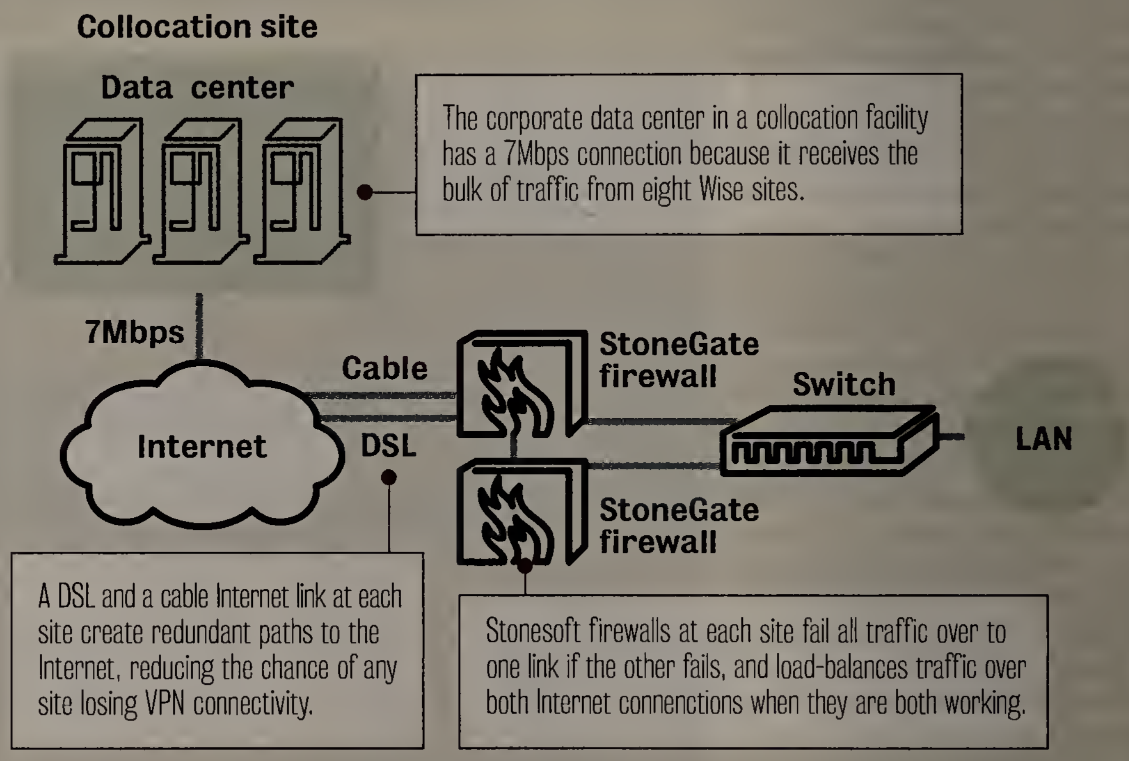
On the upside, the new architecture gives each site direct access to the Internet. Previously, if a remote site wanted to reach the Internet, the traffic had to go over the MPLS network to the lone Wise Internet connection in Alpharetta — routing that introduced unbearable delays, Picardo says. "Before, you didn't want to get on the Internet. It was pointless," he says. Now the links are used freely.

In shifting to StoneGate firewalls, Wise also got rid of its Cisco and Adtran WAN routers because the firewalls handle all necessary VPN routing. "It's not a true router, but it does what we need," Picardo says. The transition from MPLS went smoothly. "We moved from MPLS to Stonesoft and moved the data center all in one weekend, and there were no WAN issues Monday morning," he says,

Despite abandoning MPLS for his data network, Picardo says he's ready to go back to the technology to support a corporate VoIP network that will replace an expensive Centrex service. The new Verizon T-1 MPLS links will fully mesh the eight sites and plug in via IP to Verizon's network, which will interface with the public phone network. When the MPLS network has free bandwidth, it also can carry data site-to-site to supplement the DSL and cable VPN connections, he says. All that for less per month than Wise had been paying for just MPLS data, he adds. ■

A wise move

Wise Business Forms created an Internet VPN that blends access technologies to provide faster, less expensive connectivity than the MPLS VPN it replaced — with less chance of downtime.



The corporate data center in a collocation facility has a 7Mbps connection because it receives the bulk of traffic from eight Wise sites.

A DSL and a cable Internet link at each site create redundant paths to the Internet, reducing the chance of any site losing VPN connectivity.

Stonesoft firewalls at each site fail all traffic over to one link if the other fails, and load-balances traffic over both Internet connenctions when they are both working.

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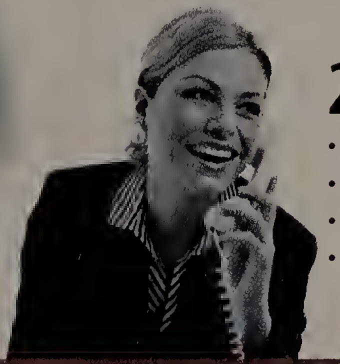

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Microsoft, EMC tackle data loss

EMC's RSA technology to be built into Windows products

BY ELLEN MESSMER AND JOHN FONTANA

Microsoft last week said it plans to integrate RSA data-loss-prevention technology into its products to enable security managers to monitor sensitive data and block unauthorized use. RSA is EMC's security division.

While calling the partnership "significant," Microsoft's JG Chirapurath didn't disclose much detail, except to say that Exchange and SharePoint are expected to be among the first Microsoft products to include this DLP capability.

In a move to bolster the partnership, RSA DLP Suite 6.5, to be out later this month, will be integrated tightly with Microsoft Active Directory Rights Management Services (RMS) within Windows Server 2008. EMC and Microsoft anticipate this will enable security managers to implement DLP by tying controls to employee identity or group membership.

"Customers want to protect their intellectual property and that requires knowledge of identity," says Chirapurath, director of identity and security at Microsoft.

Both Microsoft and RSA claim DLP Suite 6.5, which includes endpoint, network and data center components, will be the foundation for the evolution of Microsoft's DLP strategy. "It's future-ready," claims Tom Corn, vice president of product management and marketing at RSA's data-security group, about Version 6.5.

"With Rights Management Services you can place access controls on documents based on the concept of user rights," Corn says. By bringing together DLP and rights management, he adds, managers will be able to set policies for sensitive information if it shows up on a SharePoint site, for example.

Active Directory RMS is part of Windows Server 2003 and 2008. The client-side tools extend to Windows XP and Vista, and to Internet Explorer. RMS provides protection for such data as e-mail, Word documents and Web pages, using a set of policies that dictate who can access protected content and what they can do with it, such as printing and forwarding.

Microsoft points to future editions of SharePoint and Exchange as candidates for the DLP technology it has licensed from RSA, but that could be a ways in coming because the next version of SharePoint probably won't be released until 2010, and a new version of Exchange could be even later.

Chirapurath declined to comment on how Microsoft might integrate DLP into the endpoint, such as through Internet Explorer, and he says no decision has been made regarding DLP with Windows 7 or Office.

Microsoft will disclose its identity road map at a later date but DLP integration logically could extend to Active Directory Federation Services and potentially to CardSpace as part of Microsoft's recently announced Geneva project, Chirapurath says.

Microsoft itself uses RSA DLP internally to protect its data associated with payment, customers and intellectual property in thousands of its own file shares and Microsoft Office SharePoint sites. This internal use is said to be one reason Microsoft decided to work with RSA by licensing its DLP technology.

How far Microsoft will build DLP into its products is not fully clear, but RSA will continue to market its own DLP product line, which will be controlled through the DLP Enterprise Manager, Corn says. He predicts the market will evolve, with Microsoft providing some "out-of-the box" DLP capability, but says that RSA's own product will have "much more depth," and the RSA management console will "talk directly with Microsoft components as well."

Earlier this year, Cisco announced a partnership with RSA for DLP. As to how the new Microsoft alliance relates to that partnership, Corn simply says, "We're trying to bring together the major infrastructure players." ■

Contact center

continued from page 16

at home can be cost-effective because it boosts productivity.

Home agent technology has been available for 10 years, but now it is packaged so it can be deployed much more easily. "The home agent market is exploding," McGee-Smith says. Home agents are happier and more productive than those who go to a central call center, she says.

That will change how the business operates, and require personnel management tools and training for handling a remote workforce. While not a technology issue, it is one to be faced in order to be successful, McGee-Smith says.

- Don't buy more than you need. Depending on the level of sophistication of the contact center, it may be useful to employ the basic contact-center features that come with many IP PBXs, Machowinski says. "If you just need basic functionality, it should be relatively easy to set up," he says. "You could argue that if you have an IP PBX, a contact center is really easy to set up."

For better call routing, richer features, and integration with caller records and back-end platforms, however, dedicated call-center packages are the way to go. They can better tap into customer data bases to provide information that the system or live agents can use to personalize interactions and make them more successful, Machowinski says.

Automated features also can be geared to individual callers based on integration with databases. For instance, on-hold audio can present ads tailored to each caller's known interests as determined by the database.

"The more you know about the customer, the better you can serve them," Machowinski says. ■

Firefox users targeted by new malware

BY JEREMY KIRK, IDG NEWS SERVICE

Researchers at BitDefender have discovered a new type of malicious software that collects passwords for banking sites but targets only Mozilla Firefox users.

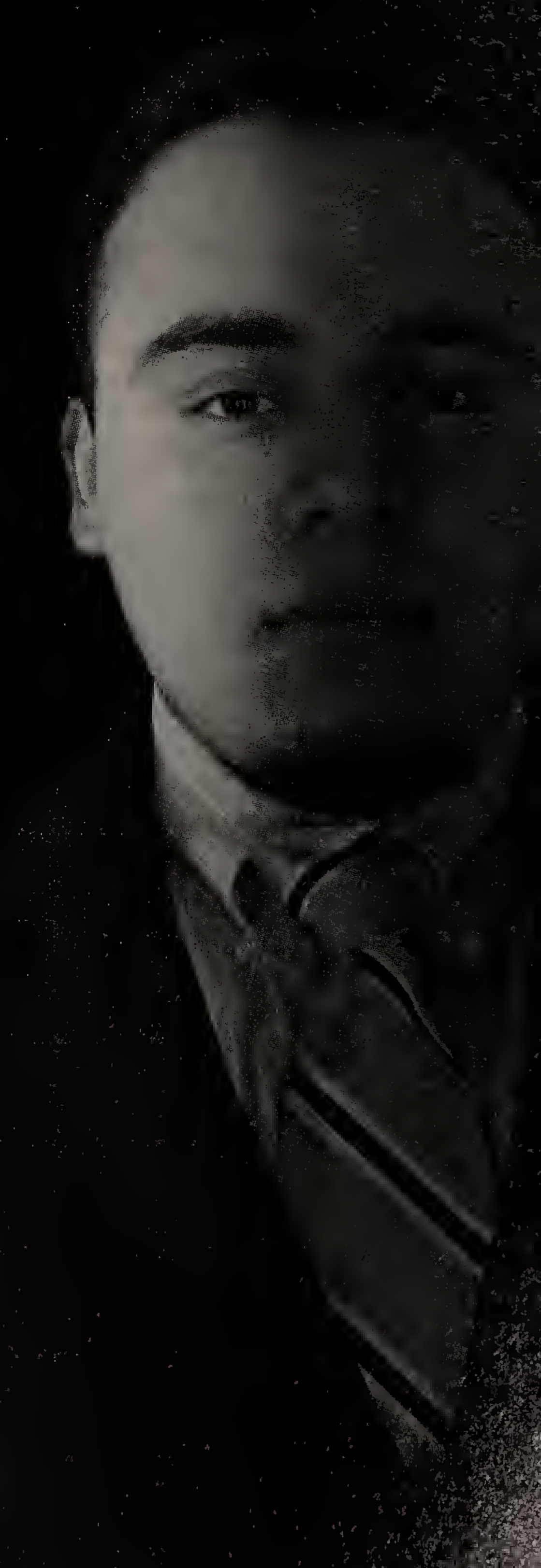
The malware, which BitDefender dubbed "Trojan.PWS.ChromeInject.A" sits in Firefox's add-ons folder, says Viorel Canja, the head of BitDefender's lab. The malware runs when Firefox is started.

The malware uses JavaScript to identify more than 100 financial and money-transfer Web sites, including Barclays, Wachovia, Bank of America and PayPal, along with about two dozen Italian and Spanish banks. When it recognizes a Web site, it will collect logons and passwords, forwarding that information to a server in Russia.

Firefox has been gaining market share against Internet Explorer since its debut four years ago, and that may be one reason why malware authors are looking for new avenues to infect computers, Canja says.

Users could be infected with the Trojan from a drive-by download, which can infect a PC by exploiting a vulnerability in a browser, or by being duped into downloading it, Canja says. When it runs on a PC, it registers itself in Firefox's system files as "Greasemonkey," a well-known collection of scripts that add extra features to Web pages rendered by Firefox.

BitDefender has updated its products to detect it, and other vendors probably will follow suit quickly, Canja says. Users could avoid it by downloading only signed, verified software, but that's a measure that restricts the usability of a PC, he says. ■



SAL'S POINT OF VIEW

The Real Stuff.

Financial services firms like ours are very dependent on the use of email and Web connectivity to conduct our business. As the Director of information technology I have to make the security of those channels my top priority.

And as the use of the domain name system to conduct attacks, steal data and interrupt business has increased, so has our need to monitor our communication channels. In this new environment, using standard command line tools to detect and fix critical problems, particularly in a crisis, is no longer an option. It's time consuming and costly. And frankly, that's time I don't have and a cost my firm can't afford. Like any smart IT guy I look for the most efficient solution to solve a problem. That's why I absolutely depend on DNSstuff to stay on top of my domain management responsibilities and fix a DNS problem fast in a crisis. DNSstuff is rock solid and reliable; an every day tool that I can't afford to be without. I can make DNS changes quickly, manage my domains with ease, and run a report in seconds. And DNSstuff's 24 hour alert service helps me detect critical changes before my users do.

Like it or not, businesses are more vulnerable than ever to DNS attacks. I sleep better at night knowing I can depend on DNSstuff to deal with it. That's my point of view. For real.

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Hard to get justice in MySpace case

NET INSIDER
Scott Bradner

Lori Drew was convicted of actions basically unrelated to what most people think she did, but even those convictions may not be what is best for you and me, or for the Internet.

According to court testimony, the 49-year-old Drew participated in an online ruse — she pretended to be a 16-year-old boy on MySpace — that ultimately led 13-year-old Megan Meier to hang herself in a bedroom closet. Assuming the testimony is accurate, the girl's death was a direct result of actions by Drew and a young woman who worked for her. It is hard to put into words the level of revulsion one feels about people who would do this sort of thing to another human, much less to an adolescent. But it turns out that acting in this vile way on the Internet is not illegal — just immoral.

Drew lives in Missouri and accessed MySpace from there. Missouri law-enforcement officials decided to not bring charges in the case because they did not find enough evidence. Los Angeles U.S. Attorney Thomas O'Brien, however, decided he would go after Drew because MySpace is based in Los Angeles and its servers are there.

O'Brien charged Drew, not with anything directly relating to Meier's death, but with accessing a computer without authorization because she violated MySpace's user agreement by, among other things, assuming a false identity. The case went to trial, and Drew was convicted of misdemeanor charges — but found not guilty of similar felony charges.

There is a lot bad for the Internet in this case. A major issue is one that has plagued the 'Net since the days of dial-up bulletin boards: There can be total capriciousness as to where charges are brought. Drew was charged in Los Angeles despite the fact that both she and her victim lived more than 1,500 miles away.

The biggest issue, however, is that this case is attempting to make not reading and obeying a Web site's user agreement a criminal offense. The MySpace user agreement (www.nwdocfinder.com/7822) is almost 3,000 words long, hardly something that many MySpace users have even looked it, much less memorized. At least MySpace has written its user agreement in English rather than in lawyer terminology. The document stating Facebook's terms of use is more than twice as long as MySpace's — and much less readable by ordinary, English-speaking humans.

Before this case, the worst that would happen if you violated a Web site's terms of service is that you could get banned from the site. With this case, you (theoretically) could go to jail if you ignore or misunderstand a multi-thousand-word terms-of-service statement drafted by a paranoid legal intern drinking too much Jolt Cola.

If the conviction is not overturned on appeal, we will all be subject to the whims of publicity-seeking prosecutors half a continent away. That said, it looks as if the prosecutors may have a hard time making this conviction stick. They presented no evidence that Drew ever saw the user agreement — in this case, ignorance of the rules may just be a viable excuse.

For the good of the 'Net, I hope the conviction is overturned. That does not mean I feel anything but revulsion when I think of what Drew and her helper did. They will not be able to escape the shame of their roles unless they again assume false identities. Maybe that is all the justice that can be expected in this case.

Disclaimer: There is a whole school at Harvard that deals with the difference between justice and the law, but I know of no statement from the school or the university about this case, so the above diatribe is mine.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.

About those 'Net capacity issues: There's more

EYE ON THE CARRIERS
Johna Till Johnson

A little more than a year ago, my colleagues and I modeled current and projected Internet capacity and anticipated demand to see if the curves ever crossed. The short answer: Yes, sometime before 2012, access (though not core) capacity would no longer be enough to serve demand.

This was the first time anyone had ever looked at demand and capacity independently, and also the first time that a "Moore's Law of Innovation" was applied to the process of demand generation. Essentially, we made the assumption that human creativity is unpredictable and boundless — as long as the Internet continues to exist, people will dream up new ways to use it. So, just as Moore observed that the density of transistors on a chip will continue to increase exponentially — without knowing or caring about the precise manufacturing techniques that enabled each step of the increase — we noted that people will develop networked applications, without predicting specifically what the next application will be.

At the time, our research was greeted with no small degree of skepticism, but in the past 12 months we've seen clear validation. In particular, moves by carriers and cable companies to throttle back heavy users have indicated that these companies are feeling the heat from demand that exceeds their access capabilities.

Since last year, for example, Comcast has implemented a monthly usage cap of 250GB. Though this sounds like a lot of traffic, I've spoken with Comcast users who have exceeded the cap twice in the past six months and came within 15% of the cap in three of the other four months, because of downloading video from the Olympics, the Democratic and Republican national conventions, and daily online system backups. (And no, this usage does not include porn).

Though this traffic load is more than typical, it certainly isn't exceptional. Keep in mind that biological systems, such as user adoption of new technologies, tend to follow Gaussian curves. So today's exceptional users are tomorrow's mainstream users — meaning that this type of usage will become typical over the next three to five years. The fact that Comcast's network is, by the company's own admission, not able to cope with such usage patterns is a clear indication that the crunch we predicted last year is beginning to occur. As Cisco put it, "Today's bandwidth hog is tomorrow's average user."

We recently updated the model with new data. No surprise: Evidence increases that demand will exceed access capacity within roughly the next four years, although capacity in the core (including raw fiber capacity and switching/routing capability) continues to outpace demand.

But that's only half the story. This year, in addition to looking at raw bandwidth capacity, we took a look at what I'm calling "logical issues": challenges to Internet scalability such as addressing, routing, multihoming and mobility. The news there is even worse: In a nutshell, Internet scalability is rapidly reaching limits due to some architectural issues inherent in the design of the 'Net. To see how, stay tuned.

Johnson is president and senior founding partner at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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VMware expands virtual desktop

BY JON BRODKIN

VMware has renamed and expanded upon its desktop virtualization software, with features that reduce storage requirements and allow offline access to desktops.

VMware View, formerly known as Virtual Desktop Infrastructure, gives IT managers an easier way to manage desktops while also providing users more flexible access to personalized desktops from pretty much any thin client or PC, says Raj Mallempati, a VMware product marketing manager. VMware View is being bundled with ThinApp application virtualization software, simplifying the deployment of applications to virtual desktops.

"VMware View combines virtual desktop infrastructure running in the data center, client-hosted virtual desktops that can run on any laptop or desktop computer, and application virtualization that provides easily packaged and deployed applications to virtual desktop environments," VMware states.

While VMware has long dominated the server virtualization market, the vendor is one of many tackling the problems of virtualizing the desktop. Competitors include Citrix, Microsoft, MokaFive, Pano Logic and numerous others.

VMware View features new "Composer" software that lets IT managers create new virtual desktops from a master template, allowing faster deployment and a reduction in storage needs of up to 70%, according to VMware. Thousands of virtual desktops can be updated or patched simultaneously by applying changes to the master template.

Offline desktop access, another new feature, lets users download a virtual machine to their PC or laptop and work when not connected to the Internet. In addition to personal documents and applications, all security policies are transferred from the central desktop server to the individual device.

VMware announced general availability of VMware View last week, having first previewed it in September. It's all part of a more holistic approach VMware is taking with desktop virtualization, Mallempati says, noting a new partnership with Wyse Technology to use VMware software with Wyse thin clients.

Basic packages cost $150 per concurrent user, while premium packages including ThinApp and all new features cost $250 per concurrent user.

More new features include Unified Desktop Access, a single interface to connect to multiple types of desktop sessions (i.e. VMware, Windows Terminal Server or physical PCs); Virtual Printing, the ability to print to any local or network printer without installing specific printer drivers; and Multimedia Redirection, a new way of redirecting multimedia processing tasks from the server to user device in order to improve user experience. ■

Firefox gets Open XML translator

BY JOHN FONTANA

Microsoft has unveiled a free plug-in for Firefox to translate Open XML documents, an update to its document translator and a tool kit for Java developers that was built under the umbrella of its Document Interoperability Initiative.

The group released the OpenXML Document Viewer as an open source project on its Codeplex Web site. The viewer translates documents in the Open XML format, which became an ISO standard in April after much contentious debate, to HTML so they can be viewed on a browser. The viewer, which is still in the preview stage, eliminates the need for a user to install Microsoft Office or any other productivity tool set.

The first implementation developed by MindTree and Microsoft works with Firefox 3.0 running on Windows or Linux and translates font types, images, text styles, diagrams, tables and hyperlinks. In early to mid-2009, the project will add support for Opera and add server-side features.

The software was released during a Document Interoperability Initiative (DII) meeting this week in Belgium.

Microsoft created DII in March with the help of Novell, Mark Logic, Quickoffice, DataViz and Nuance Communications.

The goal was to foster interoperability between document formats, most notably Open XML and the Open Document Format (ODF).

"Basically this is Microsoft sincerely going out and following up with what they did with OpenXML," said Peter O'Kelly, principal analyst with O'Kelly Consulting.

As part of that follow-up, Microsoft plans to support ODF in Office 2007 SP2, which is slated to ship next year.

On top of the Firefox plug-in, DII released Version 2.5 of the Open XML/ODF Translator, which supports Office 2003, 2007 and XP. The new version includes a set of ODF 1.1-compatible templates and chart enhancements for spreadsheet programs.

The templates provide preformatted documents, such as a business letter or fax sheet, that are based on either ODF or Open XML and allow predetermined conversions between formats.

DII also introduced a software developer kit for Java developers that aids in working with Open XML documents. The project aligns with the Apache POI project, which provides Java libraries for reading and writing in Microsoft Office formats. ■

SP2 beta for Vista available

BY JOHN FONTANA

Microsoft last week gave its MSDN and TechNet subscribers access to the beta of Service Pack 2 for Windows Vista and Windows Server 2008 and will make the software available to the general public in two days.

The beta includes all the hot fixes that have been released since SP1, which shipped in March.

Microsoft shipped a beta of SP2 in October to a small group of users in its Technology Adoption Program. This week, Microsoft is opening up the testing and plans to release the software next year.

"We are tracking to ship Windows Vista SP2 in the first half of 2009," Mike Nash, corporate vice president for Windows product management, announced on the Vista Team blog. The release will come ahead of Windows 7, which some speculate could ship by the end of 2009.

The Hyper-V integration includes one free guest license for users of Windows Server 2008 Standard, four free licenses for users of the Enterprise version and an unlimited number of licenses for the DataCenter version.

SP2 also includes the ability to configure power management policies via Group Policy.

Other improvements include the addition of Windows Search 4.0; the Bluetooth 2.1 Feature Pack that supports the most recent specification for Bluetooth technology; the ability to record data on to Blu-Ray media natively in Windows Vista; and the inclusion of Windows Connect Now (WCN) to simplify Wi-Fi configuration; and the enablement of the exFAT file system to support UTC timestamps, which allows correct file synchronization across time zones.

Users must have SP1 installed before installing SP2 and need to have loaded the update to the Windows servicing stack. ■

Searching for search tools

BY PAUL DOSCHER

According to surveys, most companies are dissatisfied with their ability to easily find information inside their own walls, meaning they have yet to find the right search tool for their business.

Given the slew of tools on the market, how can you find the appropriate one? Answering that question involves a dizzying array of factors, but three critical things to examine are:

- Connectivity: the ability to easily navigate around internal and external (Web) data from a variety of specific sources.
- Effort: the ability to implement, maintain, customize and use a solution with minimum expenditure of manpower and time.
- Scalability: the ability to accommodate large volumes of unstructured and structured data to keep pace as the company evolves.

These criteria offer a framework for assessing your company's data situation and how it may change over time, the ultimate concern when it comes to information access. These also are the criteria that most vendors highlight, so here are a few benchmarks for assessing your needs and vendor promises.

Connectivity

The amount of data that companies generate is staggering and shows no sign of slowing. IDC estimated that digital content and replicated data exceeded 281 exabytes in 2007 and expects it to grow 10 times before 2011. Moreover, the type of data to be searched and indexed is changing from mostly document-based structured data to a combination of structured and file-based, unstructured data (such as rich media). In a 2007 study by the Taneja Group, 73% of users surveyed indicated that 60% or more of their data is unstructured.

What's more, the information that must be queried is all over, some on local devices, some with databases and legacy applications, and still more outside the firewall with software-as-a-service applications and on the Web.

As such, connectivity to different data sources has become a major factor in successful enterprise search implementations.

Answering a few basic but important questions will take you far in determining the level of connectivity you need.

- What kind of information does your organization need to succeed?
- What context is required to give the information sufficient meaning?
- In what way should data be combined, integrated or processed?
- How many and what kind of users need to access this data?
- What will the access frequency be?
- Because connectivity has implications for performance and ease of use, what kind of indexing capabilities and results presentation does your business decision-making demand?
- How do you imagine your business — and data pool — changing over time?

Solutions designed to meet the broad information-access needs of larger corporations — thousands of users, hundreds of queries per second, documents in the high millions — offer essentially unlimited connectivity. Of course, the downside is often complex search interfaces that can impede intuitive search, and the platforms can be expensive to customize, integrate and deploy. The key is finding a solution that gives you the connectivity you'll need with the simplicity you want. This is where effort comes in.

Effort

The ability to connect to disparate data sources is one leg of the stool. The ability to easily manage and configure both system and data is the second. There are two types of effort worth considering: manpower required to implement, configure and maintain the tool, and the energy required by the user to use it.

With regard to manpower, the best technology investments are the ones that will perform their function well without becoming a drain on already busy staffers or stretched resources.

Moreover, users accustomed to consumer Web search are unhappy with rigid, drill-down information-retrieval tools embedded in many enterprise applications. They are equally unhappy with the meager, Web-style keyword search tools. In a business environment, sifting through an endless, flat list of links to find the information you need is unacceptable. What workers need is the simplicity of launching their quests with a keyword text box which returns organized, navigable results that can guide them to the information they need.

When considering the effort your business is willing to support, ask these questions:

- How many people will be required to manage the tool, and will they be trained subject-matter experts or can they be part-timers who multiplex across other duties?
- How stable is the solution and what day-to-day maintenance is required? Do you need a high degree of administrator intervention?
- How much control do you need to exercise over the management of your information?
- How often do changes need to be made to the way you access information?
- What sort of results presentation do you need to make the fastest business decisions?

It is important to determine what ongoing support will require. For example, if you want to add another content repository to a search application that is already running, do you really want to bring down the whole application and re-index all the information as if starting from scratch? Probably not, so check to see how your search solution works when you're in production which brings us to scalability.

Scalability

Two major factors of scalability are its connectivity and the effort required to implement and maintain it. A scalable solution connects to a variety of data sources, requires limited touch to keep it functioning and can be easily configured and reconfigured as needed.

Here are a few questions to ask to make sure a solution can adapt to the business rather than vice versa:

- How much control do you have over applications? How extensible is the solution?
- Can you add search fields/data sources to the index without having to rebuild? Can you modify any index field without having to re-index the entire document?
- Can you add hardware as needed without having to reconfigure your existing system?
- How complete is the API?
- How easy is backup and rollback?

These baseline questions will help you home in on the right search solution that will optimize your ability to access information crucial to business decision making. The bottom line: You want to find a tool that is easy to deploy, manage and use, and also offers levels of scalability, performance, sophistication and connectivity that fit with your IT environment. This way, you can really make your data sing.

Doscher is CEO of Exalead (www.exalead.com).

This vendor-written tech primer has been edited by Network World to eliminate product promotion, but readers should note it will likely favor the submitter's approach.

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GEARHEAD
Mark Gibbs

Reader feedback on cellular repeaters

Following my recent Gearhead column (www.nwdocfinder.com/7831) about cellular repeaters wherein I reviewed the Wi-Ex zBoost YX510-PCS-CEL, reader Bob Erickson (Dallas) commented, "I feel kind of guilty about Wi-Ex. It has been around for several years, and I meant to tell you about it. But, oh well, you discovered it. Probably a better solution, however, is Wi-Fi access to improve cost and access anywhere there is available service."

Bob's right — VoIP over Wi-Fi is a great option and a feature that will show up on more and more cell phones, but common availability is a couple of years off for most people.

(Regarding my comments about T-Mobile's lousy customer service, Bob said, "Since I was removed from the telecom world in 2002, I have had the 'privilege' of working in retail cell sales. If you think T-Mobile is a problem, you obviously have not experienced the other three, which are all much worse. My analysis is that in cellular service, it is not about who is best but who is not worst.")

Longtime reader Dan Wakeman (Ithaca, N.Y.) said of the Wi-Ex zBoost, "Our guys love our YX510 cell repeater. Found it (under the Tessco label) about a year ago. We have two metal-shelled structures/buildings with offices within our plant. This fixed the dead zone."

Reader Richard Travsky said, "Interesting, but is security an issue of any kind? Can't help but see this in the same light as wireless and one's neighbors picking up on it."

Good point, but I don't think there's an issue, because the cellular signal from the service tower is simply amplified and repeated — essentially a physical-layer service. Someone who could intercept a call after it was repeated could equally well intercept the original call.

A different issue was raised by reader Al Nowakowski: "Interesting, but nowhere did you mention the legal implications of using such a device. The FCC has a strange notion that you ought to have a license to transmit signals with more than 50 milliwatts of output power. They also expect that anything that does transmit signals, regardless of power output, has an FCC certification.

The zBoost gear does in fact have FCC certification. I didn't mention it because I think most of us presume that vendors that sell gear like this have to live up to those requirements.

I should mention that Wi-Ex also sells a repeater setup (also FCC approved) for public safety and emergency operations that consists of a directional antenna (to connect to remote cell towers) and a weather-ruggedized booster on a 22-foot telescoping pole [see www.nwdocfinder.com/7833]. If your organization is located in Florida, for example, this could be a crucial component of your disaster recovery plans.

Speaking of location, I have found myself using Google Maps a lot lately. I hate trusting a single service provider with so much of my data (e-mail, documents and mapping), but Google — so far — hasn't let me down, and the gods know the price is right.

Previously my mapping tool of choice was Microsoft MapPoint 2004; but the flexibility of Google Maps and the fact that, unlike MapPoint, data isn't trapped inside the mapping system are very appealing. I looked to export all of the pushpins I had created in MapPoint to some interchange format, and discovered that exporting the pushpins in a region to Excel is, quite frankly, useless. All you get is the data associated with each pushpin but without the latitude and longitude.

Next week, how to solve this problem.

Gibbs knows where Ventura, Calif., is. Locate yourself at gearhead@gibbs.com.

Keith Shaw

COOLTOOLS

Can a keyboard be full-size and portable?

The scoop: OnBoard Travel Keyboard, by Atek, about $30.

What it is: The OnBoard is a full-size portable keyboard that fits in a laptop bag. A USB cable is included that wraps around the case, and the keyboard's cover doubles as a cradle that helps it incline when it's used. A carrying case and inflatable palm rest are included.

Atek's OnBoard Travel Keyboard

Why it's cool: Keyboards that can be used with a notebook on the road typically involve something that folds or rolls up, and those usually don't have the same feel as a normal desktop keyboard. The OnBoard keyboard is as wide as a normal keyboard but not as bulky, and the wraparound USB cable is handy for storage. You might need a backpack-style laptop bag or a larger bag if you're going to take this with you on the road, but it is portable enough. The keys don't have the same "click feel" as some other keyboards' keys, but they are large enough to type correctly. There's even a number keypad, which can be very handy. Heck, my notebook keyboard doesn't have a number keypad, so this is a nice addition.

Some caveats: Some travelers may find that this keyboard is too large for them, but that's the price they're going to have to pay for one that's full-size. Some of the keys, such as the function keys and the arrow keys, are a bit smaller than I'd like, but I'm willing to adjust to that.

Grade: ★★★★★ stars (out of five).

The scoop: Juice Pack for iPhone 3G, by Mophie, about $100.

What it is: The Juice Pack is a combination extra-battery pack and soft-grip, non-slip case with a built-in iPhone dock connector. When the iPhone is inserted, extra power is provided by the case's rechargeable lithium polymer battery. Mophie claims as many as 350 extra hours of standby time; as many as six more hours of talk time (over a 3G network; as many as 12 hours over an EDGE network); as many as six hours of Internet data use (over 3G; seven hours over Wi-Fi); and as many as 28 hours of audio playback or eight hours of video playback time. The device can be recharged via USB cable, and it can be recharged with the iPhone at the same time.

Why it's cool: The iPhone 3G's battery-life issues have been well documented: Heavy voice and data use in 3G areas can drain the energy of the device in less than one workday. The Mophie Juice Pack is a valuable battery-life backup. The fact that it also doubles as an iPhone case is a nice feature. Blue lights on the back of the device give an indication of how much juice is left on the Juice Pack.

Some caveats: Wow, at $100, that's a pricey device. Also, the bulkiness of the case will add weight to your iPhone experience. Personally, I preferred the smaller Kensington snap-on battery pack (see www.nwdocfinder.com/7829), which is half the price and much more portable, to provide emergency backup.

Grade: ★★★

Shaw can be reached at kshaw@nww.com. Check out our holiday gift guide at www.nwdocfinder.com/7830.

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208.80.126.2

E-mail archiving tools take on e-discovery, policy enforcement

Symantec's Enterprise Vault garners top spot in tight, 10-player race

BY LOGAN HARBAUGH

E-mail archiving systems can serve a variety of purposes.

At the most basic level, they free users and messaging administrators from that onerous task of keeping individual in-boxes as trim as possible by automatically archiving messages to less-expensive storage.

In addition, these systems facilitate e-discovery processes in which IT staff, auditors and lawyers use specialized search functions to find messages relating to a specific topic.

The software also can be used as a policy enforcement tool that can be configured to look out for messages that defy corporate rules and forward those messages to the appropriate person for review. Finally, compliance and retention functions help IT organizations keep messages on hand to comply with corporate or legislative requirements.

In this Clear Choice Test of 10 vendors, we found that many are attempting to hit on all the uses above — to varying degrees of success — while others are homing in on one or two main areas.

We invited almost two dozen vendors to participate in this test and 11 took up the challenge, 10 of which we could compare side-by-side: Atempo's Digital Archive for Messaging (ADAM), C2C Systems' Archive One, GFI Software's MailArchiver, Intradyn's ComplianceVault, MessageSolution's Enterprise Email Archive, Mimosa Systems' NearPoint, Sunbelt Software's Exchange Archiver, Symantec's Enterprise Vault, Tangent's DataCove and Waterford Technologies' MailMeter.

We also tested Proofpoint's Email Archiving 3.0 (a product the company picked up with its Fortiva acquisition in June), but because it is deployed differently from the other 10, we've opted to cover it in a separate story (see www.nwdocfinder.com/7821).

The overall top performer was Symantec's Enterprise Vault 7.5 (Version 8.0 will be widely available in January 2009, but was not ready to be tested in our time frame), with Mimosa Systems' NearPoint and C2C's ArchiveOne suite close behind. All three offer a complete array of features, with enterprise-class functionality in management, granularity of permissions and scalability.

We've structured our findings in the context of the four main e-mail archiving purposes outlined above because we feel those are the differentiating factors in this test. (See "Performance is a wash," page 34.) For a full product-by-product breakdown, head online to www.nwdocfinder.com/7729.

Mailbox management

When used for mailbox management, e-mail archiving software mainly deals with moving messages and their attachments off the main server to the archive server, reducing space used on the central mail server.

The processes of mailbox management can be divided into two areas: backing up messages so they can be replaced if deleted by accident or lost, and moving the body of the message or any attachment to another server, leaving only a "stub" on the Exchange server as a place holder.

Backing up an Exchange server via an e-mail archiving product is not a substitute for regular backup process. For one thing, there is the issue of network performance. As noted in our sidebar on performance, we saw a typical backup rate of 30,000 messages per hour. Extrapolating from that rate, a server with 5 million messages would then take more than six days to either completely back up or restore via the message-by-message method used by most products tested.

While six days of background processing is acceptable for the one-

NETRESULTS

Product	Digital Archive for Messaging 2.1	Archive One Policy Manager 5.4	GFI MailArchiver 6	ComplianceVault eSeries 4000 eMail Archiving Appliance	Enterprise Email Archive 5.6 for Exchange Server
Vendor	Atempo www.atempo.com	C2C Systems www.c2c.com/site/products/archiveone	GFI Software www.gfi.com/mailarchiver	Intradyn www.intradyn.com	MessageSolution www.messagesolution.com
Price	Ranges from $80 per mailbox for 100 mailboxes to $16 for 5,000 mailboxes.	Costs $65 per user for 100 users; $33 per user for 1,000 users.	Ranges from $26 for 25 users to $8 per user for 1,000 users.	$30,000 for appliance (unlimited users); $5,900 for Sony Tape Library.	$104 per user for 100 users; $24 per user for 10,000, which includes installation services.
Pros	Very simple install process; support for other e-mail servers; instant messaging.	Flexible system supporting a wide variety of topologies.	Low price; scalable.	Appliance ensures simple install; WORM tape drive functionality included.	Easy install; supports a variety of e-mail server interfaces.
Cons	Relatively expensive.	Fairly complex installation; expensive.	Limited granularity of permissions.	Limited functionality beyond basic archiving function.	Search functions should be limited to date ranges; expensive at low volumes.
Score	4.13	4.5	3.5	3.75	4.0

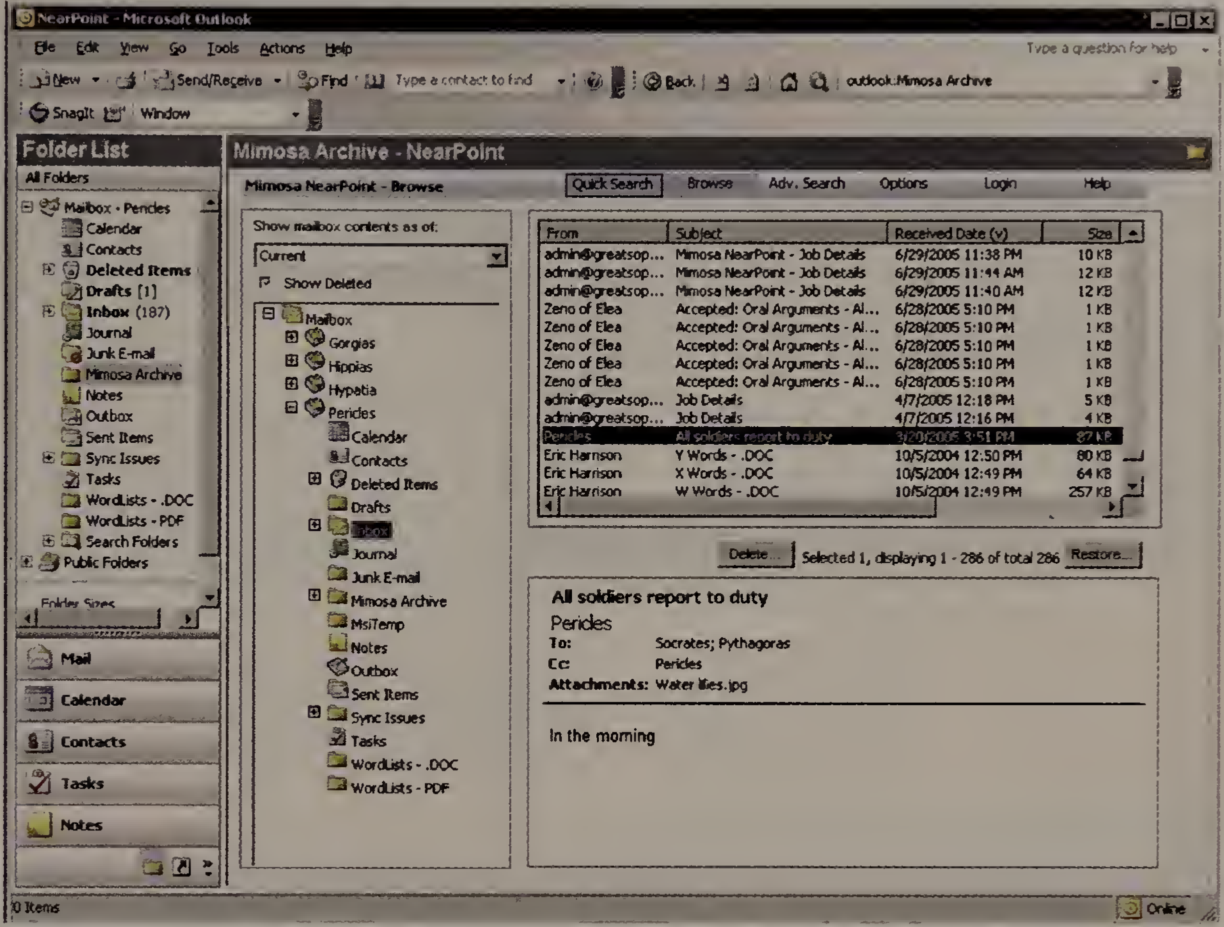
time job of establishing a new archive, it would be much faster to use a dedicated backup product such as BackupExec. Some of the products tested — namely C2C, Mimosa and Symantec — integrate with third-party backup applications to provide a single interface for archiving and disaster recovery of whole servers at better speeds than they could produce on their own.

But using these products to restore one mailbox or a single message sent to several users is a different matter, and all of the products offer self-service mechanisms for retrieving lost messages, which means that instead of an administrator having to access the backup application to find lost e-mails, users will be able to do that themselves.

Users have two options for finding and restoring a message — the Outlook plug-in or the archiving server's Web portal.

Using the Web portal is a kinder, gentler process. Users log in with their Exchange e-mail login and password and are presented with a simple search interface. While some users may need help constructing an effective search, this is not an area where a better interface will help much — only user training to explain the concepts.

Mimosa NearPoint (see screenshot of this portal, right) and Symantec Enterprise Vault are a little more usable than the rest because they have produced many more previous versions to wear the sharp corners off. But GFI's MailArchiver also did quite well in this category.



From	Subject	Received Date (v)	Size
admin@greatsop...	Mimosa NearPoint - Job Details	6/29/2005 11:38 PM	10 KB
admin@greatsop...	Mimosa NearPoint - Job Details	6/29/2005 11:44 AM	12 KB
admin@greatsop...	Mimosa NearPoint - Job Details	6/29/2005 11:40 AM	12 KB
Zeno of Elea	Accepted: Oral Arguments - Al...	6/28/2005 5:10 PM	1 KB
Zeno of Elea	Accepted: Oral Arguments - Al...	6/28/2005 5:10 PM	1 KB
Zeno of Elea	Accepted: Oral Arguments - Al...	6/28/2005 5:10 PM	1 KB
Zeno of Elea	Accepted: Oral Arguments - Al...	6/28/2005 5:10 PM	1 KB
Zeno of Elea	Accepted: Oral Arguments - Al...	6/28/2005 5:10 PM	1 KB
admin@greatsop...	Job Details	4/7/2005 12:18 PM	5 KB
admin@greatsop...	Job Details	4/7/2005 12:16 PM	4 KB
Pericles	All soldiers report to duty	3/20/2005 3:51 PM	87 KB
Eric Harrison	Y Words - .DOC	10/5/2004 12:50 PM	80 KB
Eric Harrison	X Words - .DOC	10/5/2004 12:49 PM	64 KB
Eric Harrison	W Words - .DOC	10/5/2004 12:49 PM	257 KB

Selected 1, displaying 1 - 286 of total 286

All soldiers report to duty
Pericles
To: Socrates; Pythagoras
Cc: Pericles
Attachments: Water lilies.jpg

In the morning

Mimosa's NearPoint offers a clean, simple way to let users find and restore accidentally deleted messages.

The other application falling under the mailbox management umbrella is offloading messages from the user's mailbox to the archive server. The process is similar to the one done for the disaster-recovery process — stubbing the messages on the original Exchange server and moving the body of the message and its respective attachments to the archive server.

But the driving purpose is decreasing the space used on the Exchange server to take advantage of less-expensive storage on the archive server. Because the archive server doesn't need to handle the kinds of input/output loads that the Exchange server might, it doesn't need high-performance storage — SATA-based drives are perfectly adequate, and can cost a tenth of Fibre Channel or SAS drives.

Testing in this area was pretty much pass/fail, because messages were

NearPoint 3.0.2 SP1	**Exchange Archiver 3.6**	**Symantec Enterprise Vault 2007 SP3**	**DataCove 3000**	**MailMeter 4.1.0**
Mimosa Systems www.mimosasystems.com	Sunbelt Software www.sunbeltsoftware.com/	Symantec www.symantec.com/business/enterprise-vault	Tangent www.datacove.com/	Waterford Technologies www.mailmeter.com
Ranges from $114 per user for 100 users to $62 per user for 10,000 users.	$38 per user for 50 users plus $495 required installation service.	Ranges from $61 per user for 100 users to $48 per user 10,000 users.	$25,000 for one-year license, technical support and hardware warranty.	$125 per user for 100 users; $16 per user for 10,000 users for all modules and framework.
Flexible system with great granularity; very easy to use self-service portal.	Inexpensive for small organizations; simple install.	Flexible and granular permissions structure; great policy engine; very scalable.	Simple install; integrated WORM system for archives; granular permission structure.	Capable enterprise-class system: wide variety of permissions and reporting tools.
Complex installation; relatively expensive.	Unclear documentation; offers only basic level of permission management.	Complex installation.	No mailbox management.	Installation is somewhat complex; relatively expensive at low volumes.
4.5	**3.5**	**4.75**	**4.25**	**4.13**

either stubbed correctly or not. All of the products passed.

Once messages were stubbed, the effective size of the message was reduced to 2KB, the minimum that any message takes up (at least as far as reporting the message size through Exchange).

One differentiator here is that not all products do de-duplication of the archived messages — if an attachment is the same for six users, then only one copy is stored in the archive, and links are used for the rest. While the big enterprise players — Symantec, Mimosa, Atempo and C2C — can all de-dupe attachments, it's important to note that some of the products targeted at the small-to-midsize (SMB) market — namely Sunbelt and GFI — do as well.

Once messages have been archived, ideally an Outlook plug-in is used to improve the display of stubbed messages and facilitate the retrieval of messages from the archive server.

SCORECARD

Action	Installation	Ease of use	Mgmt.	Flexibility	Total
Weighting	25%	25%	25%	25%	
Symantec	4.0	5.0	5.0	5.0	4.75
C2C	4.0	4.0	5.0	5.0	4.5
Mimosa	4.0	4.0	5.0	5.0	4.5
Tangent	4.0	4.0	5.0	4.0	4.25
Atempo	5.0	4.0	4.0	3.5	4.13
Waterford	3.0	3.5	5.0	5.0	4.13
MessageSolution	5.0	3.5	4.0	3.5	4.0
Intradyn	4.0	4.0	4.0	3.0	3.75
GFI	4.0	4.0	3.0	3.0	3.5
Sunbelt	3.0	3.0	4.0	4.0	3.5

Scoring key: 5: Exceptional; **4:** Very good; **3:** Average; **2:** Below average; **1:** Subpar or not available.

All of the Outlook plug-ins provide the same functionality — the ability to show stubbed messages clearly as stubbed, and to retrieve them seamlessly from the archive if the user double-clicks on a message to open it, essentially making the stubbing process transparent to the user. All also extend the search capabilities of the archive server to the Outlook interface, providing the same interface that users are used to in Outlook, but with orders of magnitude better response times for searches of large mailboxes.

The standout among plug-ins is Symantec, not because it offers more or less functionality or an easier interface, but because of the extremely granular level of control given to the administrator over which functions the user has access to. For instance, the administrator can grant or deny the ability to mark messages for archiving, restore accidentally deleted messages, and about 30 other functions.

Atempo, C2C, MessageSolution, Mimosa, Sunbelt and Symantec provide forms for Exchange and for Internet Information Services that enable the same level of transparent user experience inside the Outlook Web Access (OWA) interface. This does not mean that the other vendors don't support OWA — users just have to click on a link in the opened stubbed message to access the original content. Installing the forms can be complicated for the administrator, because the process involves an abstruse Microsoft management system (not necessarily the fault of the messaging archive vendors), and produces a somewhat less transparent degree of functionality. It shows a different icon to identify stubbed messages, requiring an additional click inside the stubbed message to retrieve the full message.

Atempo, C2C, MessageSolution and Sunbelt all support access to archived messages through the BlackBerry and other mobile devices. We did not test this feature.

Products from ADAM, C2C, Mimosa, Symantec and Tangent did an excellent job of mailbox management from an administrative standpoint. They all had very flexible policy engines that enable the administrator to create sophisticated archiving policies. For instance, the policy engines let you archive only messages that the user keeps for more than 30 days, messages with specific keywords in the subject line, or messages with attachments.

All products could find and import PST files from user's workstations to consolidate all e-mail, allowing administrators who previously forced users to archive messages in a local PST file on their respective PCs, to bring those messages back into the e-mail server and ensure they are archived and backed up properly. While all products tested were able to import PST files, Mimosa, Sunbelt and Symantec offer specific tools for finding PST files on users' local PCs, consolidating and automatically importing them.

The products from GFI, Intradyn, MessageSolution, Sunbelt and Waterford didn't fail at any point in our mailbox management testing, but they don't provide the depth of functionality and management granularity that the top products do. While enterprises may need that functionality, many SMBs might be perfectly happy with these products.

E-discovery: finding what you need

E-discovery is basically a jazzed-up term for an advanced search of archived e-mail. Because most of the products tested use the same SQL database, search performance is much the same for all the products, returning results from even complex searches of more than 68,000 messages in less than a second in our test setup. Of course, your mileage will vary based on the power of the system upon which you install the archiving server and the speed of the attached storage mechanisms (see "How we did it" for the systems used in our test at www.nwdocfinder.com/7730).

What differentiates products is the granularity with which IT staff can grant access to the search engine and its results. This granularity must allow users unfettered access to their own mail while extending rights to an auditor to search through e-mail belonging to various groups or users; must produce reports; and must help define what can be done with messages once they are found — such as whether they can be exported to .PST files or be passed to others for review.

Of these top performers, Symantec offered the most granular control over how much an auditor could do, which users' mail the auditor could see, what types of searches could be set up, and what could be done with the e-mails that were found. Atempo, C2C and Mimosa were all close behind Symantec.

GFI, Sunbelt and Tangent all offer fairly flexible search engines, but not as many options for creating roles with very specific limitations.

Access to the search engine is available to all users for their own mailbox through the Outlook plug-in, and via a Web portal for more general searches. All of the products provide the same user functionality, with very little to differentiate them in this area.

Moving into the realm of searching among e-mail across users, most

See E-mail archiving, page 34

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E-mail archiving

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products allow for one person, such as an auditor or e-mail administrator, to be designated to create searches. Then another person can be designated to review the messages found by the search.

Symantec Enterprise Vault offered the most flexibility by an extremely tiny margin. Many organizations won't need or care about the ability to grant an auditor the ability to view message headers but not open the messages, or to open messages but not view attachments, but in large organizations where security, human resources and legal roles are extremely compartmentalized, this level of granularity can be useful.

The difference between excellent and good ratings in this category lay in the number of security options available — the good products generally had only a few predefined roles, such as auditor or administrator. The excellent products let an IT department define custom roles with very specific abilities. For instance, Atempo, C2C, Mimosa and Symantec all provide the ability to search e-mails for the marketing group and the engineering group, to view e-mails for the marketing group but not the engineering group, and to run specific search templates such as those checking for harassment issues, but not pertaining to the Sarbanes-Oxley Act (SOX) compliance, for example.

Compliance and retention

Compliance and retention come into play when IT must adhere to legislative requirements or corporate policy regarding how and how long archived messaged must be kept on hand. What you want from a product is both the ability to specifically support legislative standards — such as the Gramm-Leach-Bliley Act, the Health Insurance Portability and Accountability Act (HIPAA), Payment Card Industry standards and SOX — coupled with an interface that lets the administrator set specific policies for retention: which documents will be retained, for how long, for which users and/or some groups, and what is done at the end of the retention cycle.

Given the amount of time it can take to go through a regulation to determine the criteria necessary to satisfy it, built-in compliance templates can save the administrator a substantial amount of time.

Atempo, C2C, Mimosa, Symantec and Waterford support a wide variety of regulations, with built-in templates for SOX, SEC/NASD/NYSE, HIPAA and more. The templates may be included with the installation software or available through the vendors' support Web sites.

The templates can save the administrator time in researching the requirements necessary to comply with a specific policy. If the administrator already has that information, creating the policy is a simple matter of selecting from a drop-down list of options.

GFI, Intradyn, MessageSolution, Sunbelt and Tangent don't include predefined policies with their products. Representatives from MessageSolution and Sunbelt say the omission is because of liability issues rather than the development effort involved.

The differences in the products we tested fall into two main categories. First, how flexible is the policy engine when identifying messages that are to be retained? Second, how many options does each product offer in terms of what you can do with messages after they've been retained?

All of the products offer as much functionality as nearly anyone would need, allowing complex if-then-else criteria to be built to determine which e-mails, which users, what length of retention period and what to do with the messages at the end of the period. What the top performers bring is not so much extra capabilities as easier access to the functionality. Again, Symantec is the top player here, with Mimosa close behind, giving administrators the ability to not only create policies to match any standard they're given, but to do so easily and to check the results by showing what e-mails would match a particular policy without having to run the archiving process.

Atempo, C2C and Waterford have the pre-built templates as well as very capable policy engines to create retention policies. GFI, Intradyn, MessageSolution, Sunbelt and Tangent are no less capable than the others in the policies that can be created, only in being slightly less easy to create the policies in the first place.

The appliance-based products from Intradyn and Tangent offer built-in write once read many (WORM) tape drives that meet specific requirements for non-alterable archives from organizations such as SEC, NYSE and NASD. While some of the software products tested — such as C2C and Symantec — support writing to WORM drives, you still have to buy the extra hardware.

Performance is a wash

Our performance test turned into a 10-horse photo-finish. In other words, all 10 products tested hit pretty much the same numbers.

Our test bed involved measuring the time it took each product to archive an Exchange 2003 server with a (4.3GB) mailbox of more than 60,000 real messages dating back nearly 10 years, and subsequently measuring the impact that running an archiving process on an Exchange 2007 server with nearly 10,000 mailboxes and a total of about 5 million messages had on overall messaging performance.

In our initial test, we had each product do a full archive of the Exchange 2003 store and all the products archived the messages at about the same rate, 30,000 messages per hour, plus or minus about 900 messages per hour. These numbers indicate that the bottleneck was the Exchange servers rather than the archiving solutions.

Archiving old messages is something that needs to be done once — after that the archiving process only needs to deal with new incoming messages.

To measure the impact of the archiving process on the messaging server itself, we delivered e-mail to the Exchange 2007 server at a rate of about 2,500 messages per hour. Server loads were recorded first with archiving disabled and then enabled. Server loads rose between 8% and 11% across all products tested. We were not surprised by the proximity of the load test results because all products use one of three methods of getting the messages from the Exchange server: journaling, copying all incoming messages to an archiving mailbox; or using the SMTP connector in Exchange. These are all methods available through the Exchange server itself — no product uses a separate piece of software to intercept messages.

— LOGAN HARBAUGH

Keeping a watchful eye on e-mail content

Enforcing corporate rules on what is — or isn't — appropriate e-mail content is not the sole responsibility of archiving products. But these tools can help find messages that violate a corporate or legal policy, and subsequently forward them to an HR representative or auditor.

Setting up a search generally means composing a list of words that will trigger the enforcement action. Those words can be derogatory, sexually oriented, indicate proprietary information or comprise characters matching specific alpha-numeric patterns, like those denoting either a Social Security number or credit card number.

Most vendors don't offer lists of words or categories as a default, mainly because of liability issues. However, lists can be downloaded from many Web sites that will serve as a starting point. All of the products that do policy enforcement have installation support, and the support engineers will install the lists if you want them pre-installed rather than approved by your internal legal department.

See E-mail archiving, page 36

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E-mail archiving

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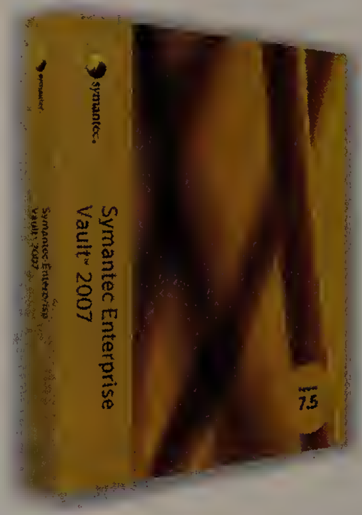
Sophisticated features offered by C2C, Mimosa and Symantec include the ability to specify that more than one word on the list must be in close proximity to another, so that one word alone out of context doesn't trigger the filter.

While the search part of this is easily done by all products tested, Atempo, GFI, Intradyn and Sunbelt don't include functionality that automatically forwards messages in violation to an appropriate enforcement agent. This is the critical part of the equation. If the HR manager or auditing administrator must manually run searches every day, the product is not acting as an effective policy enforcement engine.

All of the products tested allow for searching for e-mail that matches a list of terms, and to save and search against multiple lists. Differentiating functionality in this area consists of the flexibility to identify different classes of violations — including sexual harassment, leaks of intellectual property, transmission of proscribed data such as Social Security numbers or account information — and then to take action based on the type of violation, whether that's warning the sender that the message violates policy or forwarding a copy of the message to an HR representative or auditor, as well as the option to block or allow the sending of the message.

To complete the blocking operation, C2C, MessageSolution, Mimosa, Symantec, Tangent and Waterford archiving tools use the MAPI interface to Exchange to search through messages once they are placed in the out-box in Outlook, and to review the content before the message is sent. Configuring this option requires additional steps during installation of the archiving functionality. If a message violates a policy, instead of being sent, it is transferred from the out-box to a review folder.



Symantec's Enterprise Vault wins the Clear Choice Award for its broad feature set and granular security parameters.

All the products with the full enforcement functionality received an excellent rating. C2C, MessageSolution, Mimosa, Symantec and Waterford all had excellent, flexible policy enforcement options, which were well coordinated with many different policies that could be defined, each with a different set of search terms and notification criteria.

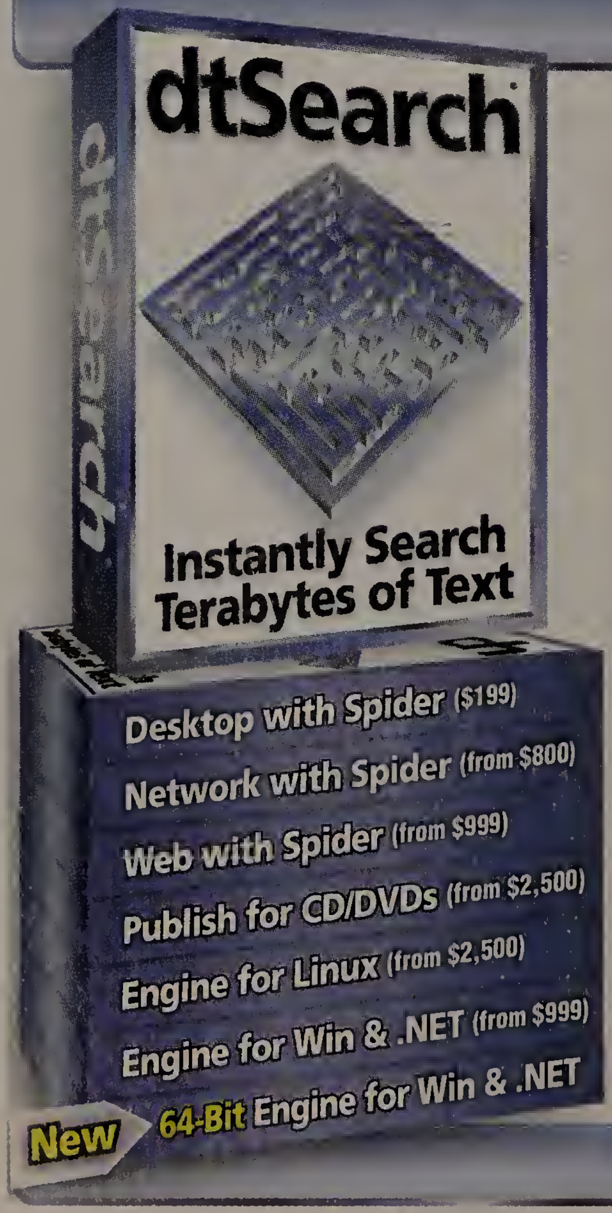
The Tangent appliance got a good rating because of its ability to automatically run searches on a regular basis and send reports of violations, but it does not allow the report readers to automatically respond to them.

Conclusion

The overall winner in this test was Symantec's Enterprise Vault because it offers extremely fine granularity for granting permissions and the overall maturity of its installation processes and administration tools that large enterprises will appreciate.

However, administrators at smaller companies who have many other responsibilities besides e-mail or who have specific needs for a particular, smaller set of features, certainly have a plethora of other viable options.

Harbaugh is a freelance reviewer and IT consultant in Redding, Calif. He has been working in IT for almost 20 years, and has written two books on networking, as well as articles for most of the major computer publications. He can be reached at logan@lharba.com.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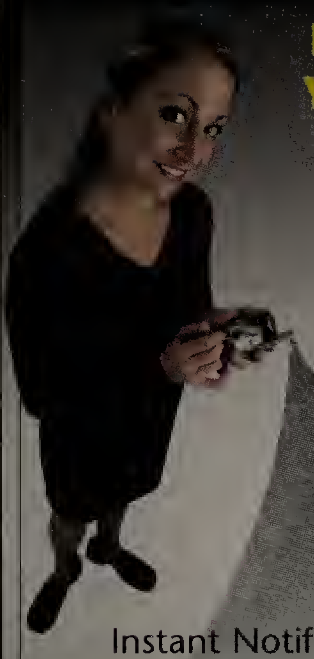

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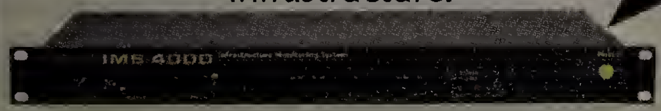

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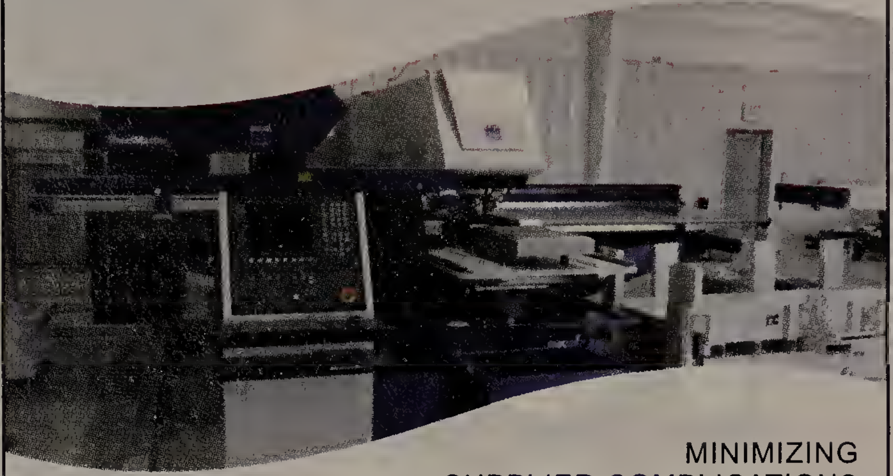

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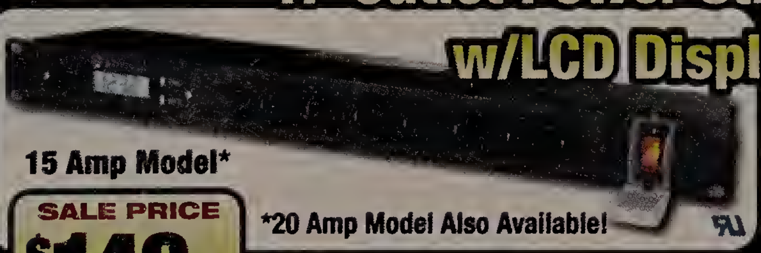

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FMC

continued from page 1

DO-IT-ALL PHONES

The market for cellular/Wi-Fi phones hit $7.6 billion in Q2 2008; and for the year, revenue is expected to jump 16% from 2007.

It worked, but we can't use it

An FMC pilot using Agito Networks' equipment "proved everything we thought it would," says Patrick Tisdale, CIO for Orrick, Herrington & Sutcliffe, a Washington, D.C., law firm where it is essential for lawyers to keep in touch with clients anywhere, anytime.

The pilot deployment showed that Agito was an effective alternative to expensive cellular signal amplification in Orrick offices; that it would cut to one the various handhelds some lawyers juggled; and that it kept them connected without requiring users to do anything, Tisdale says. But the law firm is holding off on a production deployment for now. The main reason is that Agito doesn't yet support Research In Motion's BlackBerry line, the dominant handheld for Orrick attorneys.

The benefits Tisdale confirmed and the stumbling blocks to implementation he ran into are typical of enterprise experience with voice convergence. "You have to compromise on which handsets you can use, on which PBX systems are supported or not supported; you can't mix and match Wi-Fi gear, or the Wi-Fi vendor hasn't implemented the 802.11r fast-roaming standard; or the phone features the vendor supports aren't the ones you specifically need," says Stan Schatt, vice president with ABI Research, reciting what is clearly a familiar litany of problems.

There are two types of FMC solutions: behind-the-firewall servers and carrier-based services, both enabling cell phones with Wi-Fi adapters (so-called dual-mode phones) to link with corporate IP PBXs via cellular or Wi-Fi networks. The first type comes from vendors that include such start-ups as Agito Networks, DiVitas Networks and Tango Networks and such established vendors as Avaya, NEC and Siemens. In the United States, T-Mobile's @home service, base on the Unlicensed Mobile Access standard and Kineto Networks hardware, is the leading offering of the second type.

In both types, the FMC server works with a client application to detect when a user is moving into and out of range of a cellular or Wi-Fi network. The server starts a parallel call over the alternate wireless network, mixes the audio from the two sessions, and drops the first connection.

That sounds simple enough, but it requires a kind of "cellular-grade" Wi-Fi network to provide reliable, wall-to-call coverage within the enterprise, to enforce QoS and to handle unpredictable call volumes. Such wireless LANs (WLAN) are still not all that common, though that's changing and may change faster as enterprises deploy high-throughput 802.11n.

Variations on the FMC theme

Enterprises now are weighing variations on the FMC theme, says Paul DeBeasi, senior analyst for the Burton Group, a technology research firm. "There are a fair number of people doing FMC, but they're not doing it with dual-mode phones," he says. "Integrating cell phones into the [corporate] network is going to gain more traction. It's the dominant approach that I hear people talking about now."

Integration often starts with improving cellular signals and coverage with some kind of indoor, distributed antenna system (DAS) throughout the enterprise. Florida Hospital in Orlando deployed a DAS from MobileAccess Networks for improved cellular and page coverage, to ensure that doctors and others could be reliably contacted by cell phone no matter where they are on the seven-campus hospital system. Separately, a pervasive Cisco WLAN is the wireless backbone for some 900 Wi-Fi mobile phones (Nortel-branded devices based on Polycom's SpectraLink line) for nurses and others, linked with the PBX.

Based on user requirements, there's not much need to combine these environments, according to Todd Frantz, the hospital's associate CTO. "For the most part, our employees don't move long distances between buildings or between sites," he says. "And my desk phone does a whole lot of things my cell phone still won't do."

Fayetteville State University in North Carolina has gone a step further in that integration, deploying RIM's BlackBerry Voice Mobility System, based on the 2006 Ascendent Systems acquisition. The VMS client/server software links the BlackBerry Enterprise Server with a company's PBX without any major infrastructure changes. Users get a single corporate number that can ring on all their phones (the BlackBerry, other cell phone, desk phone, office phone at home). About 50 users have it, and more want it, says Joseph Vittorelli, FSU's director of systems and infrastructure.

"For us, it's about productivity," he says. "I have a 100-acre campus and I'm rarely at my desk. [With VMS] I take care of a lot of business walking from building to building." In the past, his desk-phone voice mail typically would have 20 to 30 messages daily. Today, it's rare to have more than two or three.

Another variant is a hosted "local-area" private cellular service, such as that offered by Strata8 Networks via its own licensed spectrum in the 1900MHz band. The company sets up a base station on a site and integrates the service with the customer's PBX, while the customer selects from a growing set of CDMA cell phones and pays $30 per month, per subscriber. Interestingly, Strata8 had announced a deal to offer customers an FMC solution based on products from Tango Networks. Executive Vice President of Sales and Marketing Andrew Wilson, however, says there has been little activity or interest in Wi-Fi/cellular convergence among Strata8 customers. ■

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BACKSPIN

Mark Gibbs

The problem with free search

"You are in a maze of twisty passages ..."
– From the legendary text-based game, Dungeons and Dragons.

There was a time when the Web was like being in a Dungeons and Dragons game — it was really, really hard to find your way around. But the search engines changed all that.

Today, Internet search is the driving force behind e-commerce and the Holy Grail of every aspiring commercial operation. If your Web site appears "above the fold" in the results of any of the big search engines, then it is supposed that fame and fortune will be yours.

It is interesting to realize just how much of a balancing act the search engines have to do. They have to deliver the goods — that is, relevant search results — and then monetize their services through contextually relevant advertising. Too much advertising or too little relevance and the punters will find the service less useful and go elsewhere. In theory, the search engines have achieved this nirvana.

Even so, there's a problem with commercial interests being the driving force behind search: When viewed from the perspective of the search engines, the Internet is starting to look less like a way to access the global repository of all human knowledge and more like the biggest department store in history.

Why? Because every vendor with any competitiveness knows they have no choice: they have to play the game to be in the game and so they try to maximize the number of links that point to them and make their content broader and more relevant as far as the search engines are concerned. This in turn means their commercially oriented content gets valued more highly than content from other, possibly more relevant and objective, sites.

Just the other day I was trying to find something (I forget exactly what) and every search resulted in at least two pages of commercial results. I'm not talking about the ads framing the results, I'm talking about the actual results — they were all from companies trying to sell me something.

Had I used the right search terms, for example, by restricting my search to known expert sources, I would most likely have struck gold with my first search attempt. But the problem is until you've done some searching, you usually don't know what constitutes a relevant expert source. Commercialism has added an incredible amount of "noise" to searching.

Just imagine if television advertising had been pushed commercially as fast as Internet advertising has been. You would have had adverts with that incredibly irritating pitchman, Billy Mays, hawking cleaning products every 10 seconds and that idiot peddling "Cham wow" in a starring role in "The Sopranos" ("Check it out, Tony, simply lay the Cham wow down on the blood and then pick it up – you'd never know that Frankie Two Toes was whacked right here in the Bada Bing! Wow!").

As usual when it comes to technology, we get what we pay for. You want inexpensive software? Then it will usually work just well enough to be useful but it won't be the best engineering. So when we want to pay nothing for search, we get what pays the bills: Commercially biased results.

And here's the bigger consequence: Web content, taken as a whole, has been changed forever by this commercialism. It may well be that there never was any other plausible way for the Web to develop, but the fact remains that objective sources are orders of magnitude harder to find than they ideally should be.

We have taken one set of twisty passages and let the search engines give us a different set of twisty passages to navigate. So, here's the question: Is free search good enough or at some point — for instance, when you eventually get nothing but commercial results — will we be ready to pay for search with real relevance?

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Paul McNamara

NETBUZZ

News, Insights, oddities

Forget about a Kindle for Christmas

Forget about it, that is, unless your special gift giver happens to be an early shopper — a very early shopper.

A colleague was recently raving about her Kindle — Amazon's much-hyped and Oprah-endorsed e-book reader — so, out of curiosity, I asked what a Santa's helper might expect to spend on one of those bad boys.

Her e-mail reply: "$359, but I think you've already missed Christmas (the estimated ship date is 11 to13 weeks)."

Say what? Eleven to 13 weeks? Christmas was precisely a month away the day of that exchange, so the fact that a hot toy would be out of stock shouldn't have been a shocker; but a three-month wait for a gadget that's been on virtual shelves for a year already?

Here's what Amazon says on its main Kindle page: "Usually ships within 11 to 13 weeks.... Due to heavy customer demand, Kindle is sold out. Please ORDER KINDLE NOW to reserve your place in line. This item will arrive after December 24."

Quite a bit after Dec. 24. And does that "usually" open the door to even longer waits?

As might be expected, would-be buyers were not happy. Here's one reaction culled from Amazon's legendary "customer reviews" section: "You have to be kidding me: an 11- to 13-week back order just before Xmas. Amazon sure screwed up here. I wanted a Kindle for Xmas but I will instruct my wife not to purchase one. Why should she pay a premium for a product that has been out for so long? Amazon has had plenty of time to build up inventory and now the week of Thanksgiving the Kindle is on back order. Very disappointing.... I am so angry!"

That seemed an unassailable point of view, yet the reviewer was assailed by several of those who already have (and clearly cherish) their Kindles. It was off-topic and unfair of Mr. Angry to spout off, alleged The Lucky Ones, given that he had not actually caressed a Kindle in his own hands. Off topic? I don't know. It seems to me that a three-month wait is pretty darn on topic for Amazon visitors doing their Christmas shopping.

I suppose it's worth noting that there was a "used — like new" Kindle for sale at Amazon ... one ... for $800. And you can have your pick of them if you're willing to compete and pay a hefty premium at eBay.

The easy explanation for Kindle demand outstripping supply is the vaunted Oprah Effect — she did make a fuss about it on her television program and even had Jeff Bezos on the show. That still doesn't cut it as an excuse in my book. Given that Amazon was pulling out all the marketing stops to build exactly the kind of buzz Kindle created, having enough inventory on hand for the holidays seems elementary.

I have a request in with Amazon public relations for comment about all of this. Hope they get back to me in less than 11 to 13 weeks.

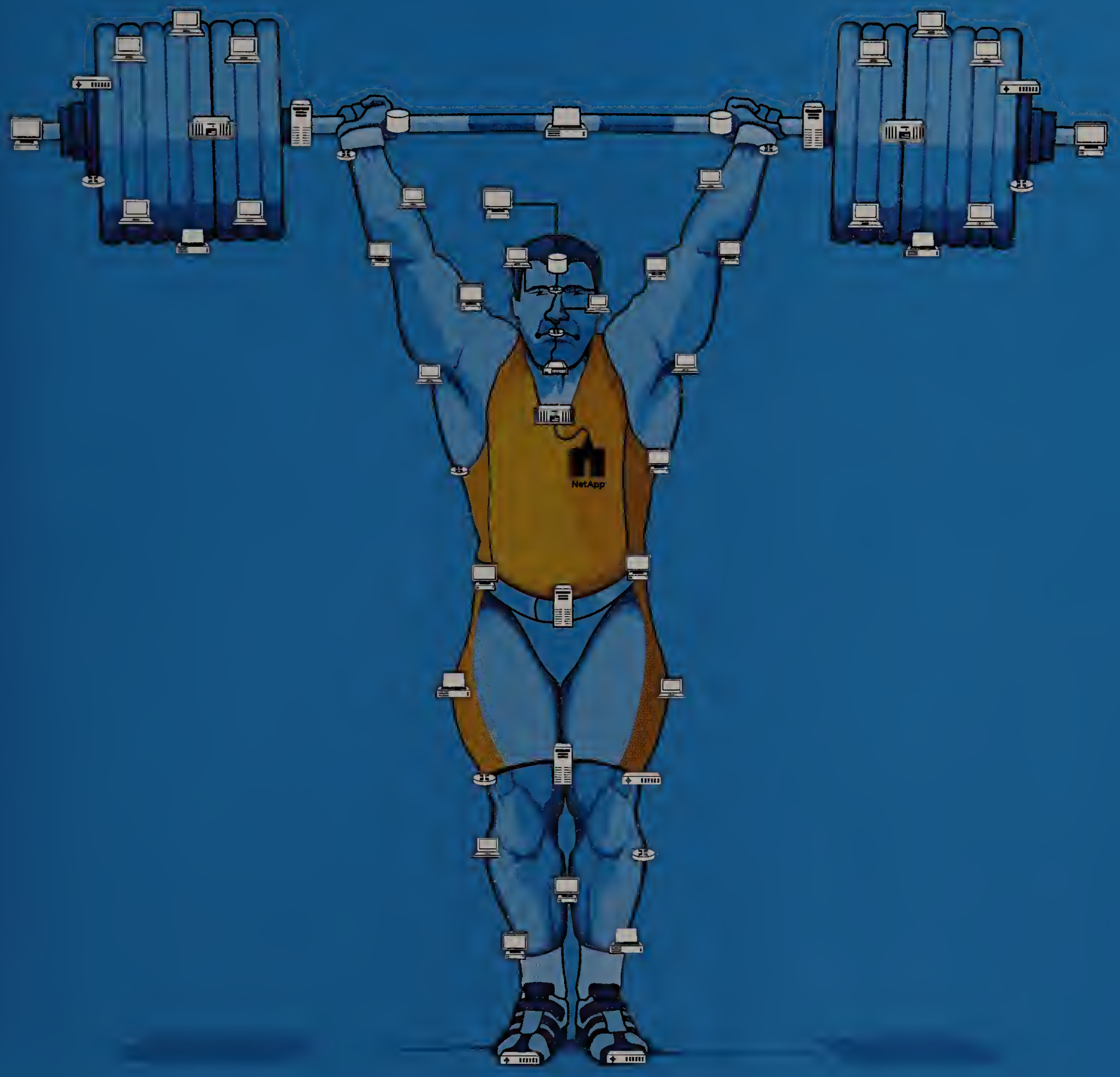
I'm twittering . . . finally

Yes, I've been a skeptic. Yes, I am generally averse to just about anything that adds additional disruption to my day. No, I cannot say yet whether this move will be a good thing, a bad thing, or just a thing.

But I am now on Twitter.

You can start following my tweets with a click of your mouse at http://twitter.com/buzzblog — although be advised that I am on vacation until Dec. 15.

E-mail still works, too. The address is buzz@nww.com.



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